

## DATA, DATA, DATA

Angus is a genetic powerhouse founded on the dedication of breeders.

by Megan Silveira, assistant editor

It was the Olympics for the livestock world — the World Congress on Genetics in Applied Livestock Production. The team at Angus Genetics Inc. (AGI) was eager to attend, said Kelli Retallick-Riley, president of AGI. With more than 1.2 million genotypes entered into the breed's national pattern evaluation and a 10% increase in genomic testing this past year, there was a lot of great progress to share with the international beef community.

"I got to stand up there, and I got to represent you," she shared during the second general session hosted at the National Angus Convention in Salt Lake City, Utah, Nov. 3-5. "I got to represent what genetic improvement and the Angus breed means, and I'm always in awe of that international community and how in awe they are of what you do here, right in the U.S. with the American Angus Association and with genetic improvement inside of the Angus breed."

But there was one question Retallick-Riley was asked while presenting onstage that still stands out to her.

Someone said, "65% of your registration is genomic tested, but

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**— KELLI RETALICK-RILEY**

why isn't every single animal being tested in your breed today?"

While Angus currently dwarfs what any other beef breed around the world is doing in terms of genomic testing, Retallick-Riley said it's up to AGI to make sure there is enough value added to the right genetic tools so Angus membership can push that value downstream in the industry.

The Angus cow is the backbone of this maternal breed, and she is the driving force behind two tools the



AGI team is focusing a lot of effort on for breeders: longevity, and teat and udder scores.

What was first introduced on stage at Angus Convention last year as "sustained cow fertility," is still a focus, but is now labeled as longevity. The phrase has been modified to both better describe the tool and help shorten the "mouthful," Retallick-

Riley said.

“The definition of this particular trait is the number of calves a sire’s daughters are predicted to produce in a lifetime,” she explained.

Past longevity, or stayability, models have looked at how long a female stays in a herd, but Retallick-Riley said that isn’t the most helpful to producers. Retallick-Riley reminded breeders a cow can be around for a long time, but duration is not a good measure for her economic benefit.

“When we talk about functional longevity, what we’re trying to get at is not only the cows that can just hang around. We want to find the cows that can hang around and give us a good calf,” she said.

AGI is calling for membership to engage in MaternalPlus® and whole-herd Inventory Reporting. When calving and culling records on a herd are submitted to the Association, Retallick-Riley said her team is able to take a step closer to predicting functional longevity.

“Your data is going to matter in the long scheme,” she reminded.

The longevity project is in the final phases. With the new year, AGI is hoping to start working on a model for a production expected progeny difference (EPD) run. Retallick-Riley said the trait is a viable candidate to be incorporated into maternal weaned calf value (\$M).

Also affecting maternal profitability is teat and udder scoring. With an intern summer project, AGI began to look at data already collected by

breeders to truly understand teat size and udder suspension.

There were roughly 50,000 records in the research, and Retallick-Riley said the team focused on heritability.

“We could start to look at things like what is the genetic correlation between teat size and udder suspension with other performance traits in our database,” she said.

Teat and udder suspension is a trait that does change with age, so it’s crucial to understand how much of the trait is controlled by genetics and what is affected by the environment. With a few more calving seasons’ data collected, Retallick-Riley said she and her team will be able to move teat size and udder suspension EPDs into a research format in late 2023, dependent on the amount of information submitted between now and then.

## INTO PERSPECTIVE

As Angus breeders participated in a poll through their phones, Retallick-Riley posed the same question to a group of panelists who joined her onstage: Everyone has their own opinions on genetics, so what traits are looked at when maternal ability of a herd is in question?

For seedstock producer Gale Haynes of Haynes Cattle Company in Colorado, it comes down to making sure genetics create an animal that’s phenotypically competitive.

“Everybody likes to look at a good calf,” he said.

Echoing the results from the audience poll, Haynes said

performance and cow production is the bottom line. As he’s providing Angus genetics to his commercial customers, Haynes said the cattle have to withstand the influences of the real world — availability of feed, weather and more. These cows have to do their job.

As the environment changes, however, one might think the “job” changes, too. Can the same genetic tools be used for cattle in Colorado that are used for cattle in Texas or New Hampshire?

Larry Kuehn, USDA Meat Animal Research Center (USMARC), said the genetic tools can be implemented no matter where a producer’s herd calls home.

“You actually still get those animals’ ranking in who’s performing better in each of those environments, and that ranking really tends to stay the same regardless of those environments,” he said. “They still are a good measure of how those cattle react. They’re good predictors of the genetic ability of the sires, as well.”

Andre Garcia, AGI, said those prediction tools, however, are only as good as the data submitted by Angus breeders.

“We need to collect those records in order to be able to characterize the genetics and the genetic heritability that we have,” he added. “When we think about those sires’ EPDs, those are so important, and to really get a good spread on those and have a good accuracy on those EPDs, we really have to have a lot of records in the population.”

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Alan Miller, AGI chairman, works to serve as the voice of both breeders and the AGI team. It's part of his job to help make decisions for the genetics team in Saint Joseph, Mo., that reflect the needs of Angus members and keep the Association at the forefront of the beef industry.

He said maternal traits are something that might have been brushed aside in the past, but it's an area that's been getting a lot more emphasis lately.

"Not only do we have to work with the staff to make sure you've got all the right traits going into these indexes and these prediction tools, but then we also have to make sure that we have ways for our membership to submit this data as simply and easily as possible."

Breeding objectives, both those behind the tools refined by AGI and those developed on an individual's cattle operation, are a practical method of making genetic change, Retallick-Riley said.

Garcia added that objectives create clear goals and can really



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Panelists' perspectives seemed to align with the majority view of audience members on genetics topics, as poll questions were answered live during the conversation.

move the needle in the industry as the population evolves. Thanks to genomics, Kuehn said there's less of a gamble in the inheritance of traits, so the needle is actually being pushed in the right direction.

"That's what's happened here with genomics. Suddenly we're able to make a big change fast," Kuehn explained. "It means the data has still got to keep coming, we've got to keep reevaluating."

Duc Lu formerly managed the genomic database at the Association, and he said he worked daily to find large marker effects for individual lowly heritable traits or lowly reported traits. He explained that because of genetic evaluation, breeders receive two pieces of information for each registered animal: EPDs and accuracy. Without accuracy, EPDs don't mean much, Lu said, but accuracy is only built with

more data.

"You have to increase the number of phenotypes; you need to collect phenotype on that particular animal or its relatives in order to move the accuracy," Lu explained.

Haynes said his operation is built on genetics. It's EPDs that help him breed better cattle to sell better genetics and to put better beef on the table. He, like many other Angus producers, will continue to submit data to the Association, because he said he trusts AGI to turn that data into useful tools. He said he trusts AGI to help him breed for his perfect maternal Angus cow. **A**

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