

# Doing Right

**AHA research aims to enhance the positive sustainability story of Hereford genetics and the cattle industry.**

by *Wes Ishmael*

**B**eef consumers, direct customers and financial partners want to know how beef cattle production contributes to environmental sustainability.

“Sustainability is not a nice-to-have anymore; it’s a need-to-have,” says Kim Stackhouse-Lawson, Ph.D., director of Colorado State University’s (CSU) AgNext, a research collaborative developing sustainable solutions for agriculture. “Yes, producers have been here for generations, but today we have to say, ‘We’ve been here for generations and here’s how we continue to improve and continue to care.’ The proof points in today’s society are expected, whether that’s fair or not.”

Stackhouse-Lawson explains most of the pressure on U.S. cattle and beef currently comes from concerns about climate change, specifically the level of greenhouse gas (GHG) produced by the industry.

“We know cattle are natural up-cyclers. We also know how much more efficient U.S. beef production has become over time in terms of producing more beef with fewer cows on less land. The American cattle producer is the most efficient in the world,” says Jack Ward, executive vice president of the American Hereford Association (AHA). “But we also know the global population is expected to grow by almost 2 billion by 2050. We know the good Lord is not going to make any more natural resources in terms of land. So, how do we become more efficient and how do we, from a genetic standpoint, affect overall sustainability?”

All the above are behind a new cooperative AHA-CSU research project.

## Identifying genetics associated with GHG

“The primary objective of this research is to give the American Hereford Association, its breeders and their customers tools that will help improve the environmental footprint of beef production,” says Mark Enns, Ph.D., a beef cattle geneticist at CSU and a member of the research team.

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— **Craig Huffhines, Colorado State University**  
director of equine sciences  
and elite bovine and equine genetics



Olsen Ranches, Harrisburg, Neb., installed GrowSafe systems in 2010, adding individual feed intake phenotypes and feed efficiency data to the AHA National Reference Sire Program.

Research will leverage decades of phenotypes for individual feed intake collected by AHA members, as well as previous feed efficiency research conducted by the Association.

“Over time, we’ve documented the value of Hereford genetics in commercial cow herds in terms of fertility, longevity and other traits associated with production efficiency. All of those things, as we understand currently, are going to have a positive effect in terms of sustainability as we move forward in the industry,” Ward says.

AHA-CSU research aims to enhance understanding of the genetic differences in seedstock relative to enteric methane production and nitrogen excretion, a byproduct of rumen fermentation.

Methane emission, as a genetic trait in cattle, appears to be moderately heritable with genetic correlations (modest to strong) to economically relevant production traits, such as measures of growth, dry matter intake and various estimates of feed efficiency.

Previous research also suggests genetics play a significant role in nitrogen excretion by cattle. It and the animal’s environmental footprint can be reduced through selection.

## Efficiency and sustainability

“A more fertile cow is a more sustainable cow. Getting more cows bred early in a cycle and weaning more pounds of calf per cow exposed are significant efficiency advantages,” explains Shane Bedwell, AHA chief operating officer and director of breed improvement. “Previous AHA research and research from the U.S. Meat Animal Research Center (USMARC) documents Hereford’s various efficiency advantages.”

For instance, USMARC documented a nearly 2-pound advantage in feed intake for Hereford steers compared to other breeds in the study.

“Dr. Lalman at Oklahoma State University showed the same intake advantage, comparing the Hereford-sired F1 black baldy female to the straightbred black Angus female on a pasture diet while maintaining more body condition,” Bedwell says. “So, when you add up all of the things that Hereford-sired F1 female can do, it tells a tremendous sustainability story.”

Stackhouse-Lawson explains the amount of feed cattle consume is a true indicator of the amount of greenhouse gas they will emit.

## Extending social license

“This is just another opportunity that might inform us of what the true genetics of our footprint might be. I think it’s critically important for us to remain positive about this type of research and that we need to remain aggressive at telling our own story. We need to have the data so that others are not telling the story for us.”

“This is going to help us maintain the license to operate. I think that is a key term we all need to understand,” says Craig Huffhines, director of equine sciences and elite bovine and

equine genetics at CSU, who is also the former AHA executive vice president. “What is our license to operate? What is society going to allow us to do to stay in business and feed a growing population?”

Beyond providing customers, consumers and financial partners with data verifying the environmental sustainability of beef cattle production — doing the right thing — Stackhouse-Lawson notes there could also be financial rewards.

“If we get this right and can measure a (GHG) reduction, you could get paid for it because we’ve seen big companies make commitments around net-zero goals, and there will be expectations those companies make progress toward the goals,” Stackhouse-Lawson explains. “They’re going to have to incentivize the adoption of practices that reduce greenhouse gas emissions.” **HW**

**Editor’s Note:** Scan the QR code to watch a webinar about the AHA-CSU research project.

