

# Investing in science to build demand

## THE KANSAS BEEF COUNCIL FUNDS RESEARCH TO GAIN INSIGHT THAT WILL BENEFIT THE ENTIRE INDUSTRY

■ *By Grace Jacobson*

The American beef industry already is the most efficient in the world. However, that has not stopped the beef community from continuing to look for ways to improve the industry from pasture to plate. This is why the beef checkoff is committed to innovative research that benefits producers and consumers alike.

Over the years, and still today, studies funded through the Kansas Beef Council (KBC) have helped drive beef demand and allowed the industry to be scientifically sound in all endeavors, focusing on product quality, human nutrition, sustainability and market research.

### NUTRITIOUS FINDINGS

One of the nutrition “trends” the beef industry has been most affected by is the belief that beef is not healthy. This, of course, is not based in fact and is one of the reasons KBC has put an emphasis on studying human nutrition.

Most recently, the council partnered with NCBA to fund two different research projects that began earlier this year. One study, led by Robert Wolfe with the University of Arkansas, will focus on the effects of beef consumption on skeletal muscle protein homeostasis and inflammatory factors in post-menopausal women. The other project will concentrate on how eating beef could impact risk factors linked to heart disease and will be led by Lauren O’Connor with the National Cancer Institute.

Wolfe’s study will help health professionals understand how high-quality protein in beef, compared to plant-based protein, affects muscle health and inflammation for an important at-risk group – post-menopausal women. This study is the first of its kind, as it solely uses female participants who are in the post-menopausal stage of life when there is an increased emphasis on health conditions such as sarcopenia (muscle wasting) and cardiovascular disease.

“A common theme in human nutrition is the lack of female-only research,” said KBC Director of Nutrition Abby Heidari, RDN, LD. “The significance and impact of this research on post-menopausal females will be an important contribution to science, but it could also play a large role in supporting public health recommendations for high-quality protein in an aging population who are likely to modify their diets and show improved outcomes from potentially serious health risks.”

O’Connor’s research project is a secondary analysis that builds upon four previous randomized/controlled feeding trials. O’Connor and her team

will be utilizing the latest technology – metabolomics – to identify biomarkers unique to beef, and how they are related to various diet patterns and health conditions. Collective data gained by this study should offer a better understanding of how beef intake might affect risk factors related to heart disease.

Both studies began in January and are expected to take two years to complete.

“It is not enough for consumers to know that beef is safe to eat,” said Philip Weltmer, Kansas rancher and co-chair of the Cattlemen’s Beef Board Nutrition & Health Committee. “Consumers want to know beef is good and nutritious for them to eat at any point in their lives. These research projects will do exactly that.”

### REAL VERSUS ALTERNATIVE

While nutrition research is important to help promote beef as a healthy product in all diets, a focus on quality aids in maintaining beef’s reputation as the most enjoyable and best-tasting protein. With that in mind, KBC has worked closely with researchers from Kansas State University on projects comparing the quality of beef to that of alternative protein options.

One of the most exciting KBC-funded studies used taste testing to evaluate the eating quality of ground beef compared to its plant-based counterparts. What K-State researchers discovered after collecting consumer preferences and perceptions was that, despite marketing attempts, plant proteins are not a direct substitute for ground beef.<sup>1</sup>

“Our results clearly showed that these products did not have the same level of flavor, tenderness, juiciness, and overall eating quality of ground beef and, therefore, should be marketed as a different and unique product, not as a substitute for ground beef,” said Travis O’Quinn, the associate professor in animal sciences and industry at K-State who led the team of researchers.

These differences were not just anecdotal; they were backed up by further research. Another study conducted by K-State compared the chemical composition, toxicology, estrogenic activity, taste and price of ground beef with meat substitutes. The researchers found that plant-based ground beef alternatives have different textures and physical characteristics than real ground



beef, thus dispelling the claims that alternative proteins are a direct substitute.<sup>2</sup>

With the increase of plant proteins and substitutes in the market, KBC wants to ensure that consumers, producers and the scientific community know the differences between these protein options and real beef.

### **BEEF SUSTAINABILITY**

Although food and diet trends come and go, they can have a major impact on perceptions of beef. In recent years, much of the conversation surrounding food has focused on sustainability and greenhouse gas emissions. This led KBC to fund a K-State study comparing consumer beef sustainability preferences to industry and policy initiatives. The goal of this research is to understand what consumers think sustainable beef is, while also informing the general population about current beef sustainability efforts.

The study will be a survey where consumers report their current understanding of multiple topics concerning sustainability. They will rank different aspects, including animal handling, antibiotic usage, greenhouse emissions, etc., based on priority and willingness to pay for those attributes. Participants then will be presented with information on current beef cattle sustainability efforts and definitions. Results of the study will help the beef industry adjust messaging to help consumers see that beef can fit within their social or environmental preferences.

“This is a great study because not only does it give us a chance to understand what consumers’ perceptions on

sustainability are, but also share producers’ perceptions with consumers,” said Randall Debler, a rancher from Alma and chairman of the KBC Executive Committee.

### **FOOD SAFETY AND QUALITY**

End-product safety and quality also is a focus for beef checkoff research. In 2012, KBC and NCBA co-funded two studies to better understand *E. coli* and related diseases to help reduce food-borne illness after harvest.

These two organizations again came together last year to provide funding for research that will help determine opportunities to reduce carcass shrinkage and quality loss after freezing.

While there are multiple research studies currently in progress, KBC continues to work with entities like K-State, NCBA and others to fund future studies that will benefit the entire beef industry.

*Grace Jacobson is the communications coordinator for the Kansas Beef Council. ■*

<sup>1</sup> Davis, S. G., Harr, K. M., Bigger, S. B., Thomson, D. U., Chao, M. D., Vipham, J. L., ... O'Quinn, T. G. (2021). Consumer sensory evaluation of plant-based ground beef alternatives in comparison to ground beef of various fat percentages. *Kansas Agricultural Experiment Station Research Reports*, 7(1). doi: 10.4148/2378-5977.8036

<sup>2</sup> Davis, S. G., Harr, K. M., Farmer, K. J., Beyer, E. S., Bigger, S. B., Chao, M. D., ... O'Quinn, T. G. (2021). Quality of plant-based ground beef alternatives in comparison with ground beef of various fat levels. *Meat and Muscle Biology*, 5(1) 1-15. doi: 10.22175/mmb.12989