

## Marbling research shows healthy fat in beef has benefits

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Dr. Stephen Smith, Texas A&M AgriLife Research scientist and professor in the department of animal science at Texas A&M University, looks over research examining marbling and healthy fat in beef. Credit: Blair Fannin

Beef with reasonable marbling and juicy taste is preferred among consumers, and industry leaders continue to monitor how to consistently produce a product with these traits. A recent research article addresses the biology and biochemistry of beef marbling and its effects on production systems, carcass and fat quality.



"We need <u>fat</u> in beef to improve the eating experience," said Dr. Stephen Smith, a Texas A&M AgriLife Research scientist and Regents Professor in the department of animal science at Texas A&M University. "We can increase the fat and marbling throughout the production cycle, but for many years there's been this perception among consumers that too much fat in ground beef isn't a good thing. Against conventional wisdom, ground beef of all kinds actually is healthy for you."

Smith teamed with Dr. Brad Johnson, Gordon W. Davis Regent's Chair in the department of animal and food science at Texas Tech University, to co-author a paper, "Marbling: Management of cattle to maximize the deposition of intramuscular adipose tissue."

Smith said within the article they describe the published ground-beef studies and how ground beef affects cholesterol in humans.

"In most studies, ground beef increased high-density lipoprotein (HDL) cholesterol – the good cholesterol – in men and women," he said.

According to the research, the relationship between fat and overall palatability "underscores the importance of grain feeding and intramuscular lipid in beef quality."

As fat increases, it is accompanied by a decrease in the proportion of saturated fatty acids and trans-fatty acids with a corresponding increase in oleic acid and other monounsaturated fatty acids.

"The more cattle fatten, (the more) they put down more marbling and the more healthful the beef is," Smith said.

Both Smith and Johnson said they wondered why. Randomized, controlled studies evaluated individuals who consumed ground beef formulated from long-fed, grain-fed steers for five weeks (five patties



per week), compared to consumption of regular ground beef – lower in oleic acid. HDL cholesterol increased significantly in normocholesterolemic men and postmenopausal women fed the higholeic acid ground beef. In these studies, the men consumed ground beef containing 24 percent fat and the women consumed ground beef containing 20 percent fat.

The conclusions were that, even at these high levels of fat intake, ground beef had no negative effects on lipoprotein cholesterol metabolism in men and women, and ground beef naturally enriched in oleic acid had positive health benefits.

"We hope to convince everyone in the beef production chain, all the way from producers to retailers, that healthy fat in beef not only improves flavor, but you can modify the animal naturally so that the beef contains more oleic acid," Smith said. "This provides a very palatable product that, even though it contains a relatively high level of fat, is not going to have a negative impact on cholesterol metabolism in humans."

**More information:** The research can be found online at <u>www.beefresearch.org/CMDocs/BeefResearch/PE\_White</u> %20Papers/Marbling%20-%20Management%20of%20cattle%20to%20 maximize%20the%20deposition%20of%20intramuscular%20adipose% 20tissue.pdf

Provided by Texas A&M University

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