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Cattle and Climate Change

Cattle industry must deal with the consequences of the consuming public's perception of bovine contributions to global warming.

*by **Troy Smith,** field editor*

It's a hot topic in California, this climate change thing. It's a hot topic internationally, too. However, according to University of California–Davis Animal Science Professor and Air Quality Specialist Frank Mitloehner, discussion of mankind's contribution to climate change is clouded in confusion.

Among climate scientists who believe the prevailing atmospheric and weather conditions for various regions of the planet can and do change, not all subscribe to the "global warming" theory. Even among scientists in agreement with global warming, not all agree about the extent to which climate change is anthropogenic — resulting from human activity.

Generally accepted as a consequence of human activity are greenhouse gas (GHG) emissions capable of trapping heat within the Earth's atmosphere. The primary GHGs blamed for the so-called greenhouse effect are water vapor, carbon dioxide, methane and nitrous oxide. However, discussion of GHG emissions' impact on climate are influenced by both science and supposition. Frank Mitloehner fears the issue has become so politicized that sound science is often ignored. Much misinformation has been disseminated by supposedly legitimate media, influencing the opinions of people all too anxious to share their personal opinions via social media.

People "share" all kinds of things. For example, it has been stated that livestock production is responsible for more than half of total global GHG emissions. It has also been alleged that grass-finishing beef production systems produce lower levels of GHG emissions than finishing systems utilizing grain. Neither, says Mitloehner, is true.

"People have a ready forum to spread their views, regardless of their credibility," says Mitloehner, who encourages cattle producers to fight back.

Whether or not they believe climate change is real and GHG emissions are involved, producers must realize that many consumers do believe it. For that reason, these people are concerned — even fearful. Cattle producers will have to deal with the consequences of that.

Production systems based on efficiency, including finishing cattle on grain, can optimize pounds of product produced per acre of land, while producing fewer GHG emissions than alternative methods.

"It's insane to ignore it and not engage in the discussion," warns Mitloehner. "If we don't engage, we leave it to the misinformed and misguided to shape public opinion and forge public policy."

Battling misinformation

Mitloehner took up the gauntlet himself, after reading the United Nations Food and Agriculture Organization (FAO) report *Livestock's Long Shadow: Environmental Issues*

and Options, released in 2006. The report stated that livestock production is responsible for 18% of global GHG emissions — more than the global transportation sector. Mitloehner claims the report has played a major role in confusing matters. He and his UC–Davis colleagues reviewed the oft-quoted report, finding its conclusions misleading.

The team said the FAO reached its conclusions for the livestock sector by adding up emissions from farm to table, including the gases produced by growing feed for animals, animals' digestive emissions, and processing meat and milk into foods. For transportation's contribution, however, the figures did not include total emissions from well to wheel. Instead, only emissions from fossil fuels burned while driving were tallied. Mitloehner called the result a "classic apples-to-oranges comparison."

FAO representatives conceded to an unfair comparison, but defended the "18%" attributed to global livestock production of GHG. The problem, claims Mitloehner, is the subsequent implication that the figure is representative of the U.S. livestock industry, when it does not accurately reflect the livestock contribution to GHG in the United States or other developed countries. He notes the U.S. Environmental Protection Agency (EPA) "official" findings showing how in the United States all livestock account for 4.2% of GHG emissions, while the energy production and transportation sectors account for 31% and 27%, respectively. Thus, consumption of fossil fuels contributes more than half of GHG in the United States.

"The FAO report leads us to the wrong path to solutions, suggesting that our food choices are the answer to fixing the problem, and that is wrong," states Mitloehner.

PHOTO BY TROY SMITH

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Making improvements

That doesn't mean the livestock production sector does not have a responsibility to do its part in reducing GHG emissions. Overlooked by its accusers, though, are the improvements already made. Livestock production in developed countries has become more concentrated geographically, and production efficiency has increased such that the environmental impact is reduced.

"The U.S. is the country with the relatively lowest carbon footprint per unit of livestock product produced. The reason for this largely lies in the production efficiencies [of meat, milk and eggs], whereby fewer animals are needed to produce a given quantity of animal protein food," insists Mitloehner.

With regard to GHG emissions, the notion that modern production technologies should be shunned in favor of old-school methods is fallacy. Production systems based on efficiency, including finishing cattle on grain, can optimize pounds of product produced per acre of land, while producing fewer GHG emissions than alternative methods.

"Improvements in livestock production efficiencies are directly related to reductions of the environmental impact," explains Mitloehner. "Production efficiencies and GHG emissions are inversely related; when one rises, the other falls. The FAO realizes this now."

According to Mitloehner, the FAO has formed an international partnership project to promote scientifically sound assessment of animal agriculture's environmental footprint. Dubbed the Livestock Environmental Assessment and Performance Partnership (LEAP), the effort involves more than 300 scientists from around the world, who are collaborating in the development of a global benchmarking system for assessing livestock species and production regions, and identify opportunities for improvement, relative to each specie and region.

Mitloehner believes the answers lie in the furthering of technologies livestock producers apply to improvement of genetics, reproduction, nutrition and animal health. Technologies and best practices that have been developed, implemented and proven over time can be adapted to various production regions around the world.

"Now is the time to end the rhetoric," says Mitloehner, "and separate facts from fiction around the numerous sectors that contribute emissions, and to identify solutions for the global food supply that allow us to reduce our impact on the planet and its resources."

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Editor's Note: *Troy Smith is a freelance writer and cattleman from Sargent, Neb. Frank Mitloehner was a presenter at the Beef Methane Conference, hosted May 11-12, 2016, in Lincoln, Neb. The program was organized by the University of Nebraska Extension, with funding by a USDA NIFA (AFRI) grant.*