

# **“Animal Ag’s Role in Greenhouse Gas Production: A Closer Look”**

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The webcast is archived at:

[http://www.extension.org/pages/Animal\\_Ag%E2%80%99s\\_Role\\_in\\_Greenhouse\\_Gas\\_Production](http://www.extension.org/pages/Animal_Ag%E2%80%99s_Role_in_Greenhouse_Gas_Production)

*Your slide showing forest land gain -- what time period?*

Frank Mitloehner: It covers the time period 1990 until 2006.

*Dr. Mitloehner, is your 3% estimate of US GHG emissions from animal agriculture based on a LCA-3, or just the EPA numbers for enteric fermentation and manure management? Also, according to the USDA, “[t]he United States imports significantly more cattle than it exports.” In 2008, the US imported over 2.4 billion pounds of beef, and in 2009 almost 200 million pounds of beef and veal from Brazil alone, a country known for deforestation due to pasture expansion. Are emissions from these types of sources accounted for in your calculation? Is the LCA-3 number of 3.4% published?*

Frank Mitloehner: The 3% is just enteric and manure emissions but they are by far the major components of the livestock system. There is overlap between crop and animal agriculture because of manure and fertilizer issues. If one teases the livestock related portions out of the other parts of the EPA emission inventory, one arrives at 3.4% for livestock. Indirect emissions for animal agriculture are much lower than direct emissions. The total livestock, assessed with LCA-3 is 3.4%. The 3.4% figure does include fertilizer and all other indirect emission issues for livestock in the US. We have ‘dissected’ the EPA numbers for Ag emissions and our [paper](#) shows the process.

*EPA’s graph is emissions AND sinks?*

Frank Mitloehner: Correct.

*Do you see the efficiencies of cattle in feedlots being fed a "hot ration" net lowers the GHG footprint versus disperse growout using forage? Do LCA 1 and 2 include the GHG impacts of the feed in a comparison like this? How do different feeds affect the amount of methane produced from enteric fermentation in livestock?*

Frank Mitloehner: GHG are higher for grassland versus mixed systems. It has to do with the fiber content, which is strongly correlated with CH<sub>4</sub>. Also, grassland systems finish over a much longer period. The differences hold true using LCA-3 comparisons.

*Does the EPA have plans to do a LCA-3 of various sectors, including animal agriculture? Do you think EPA should be able to collect more data from agricultural operations, particularly CAFOs?*

Frank Mitloehner: I believe that EPA already has conducted inventories for numerous sectors (see EPA 2010 GHG emission inventory). The results from the recently completed NAEMS study will fill some voids for livestock facilities.

*Aren't Brazil and Paraguay two of the largest exporters of beef? Shouldn't we take into account the worldwide trade in these products when figuring out what the worldwide impact is?*

Frank Mitloehner: Brazil is a major export nation, but Paraguay is not. While Paraguay causes a lot of GHG due to deforestation, it needs to be put into perspective. The entire carbon footprint of Paraguay is the same as that of Washington, D.C. It is true that the U.S. imports beef, etc from other countries.

***What are the specific ways we can reduce GHG from agriculture here?***

Frank Mitloehner: One of the main avenues will be waste management. I believe that anaerobic digesters will have a future and they would certainly reduce CH<sub>4</sub> from waste. In the US, we need to consider waste management improvements. Use of digesters will reduce GHG. There is also room left for improvements in efficiencies.

***Only CAFO's can handle methane digesters? Up-front costs are high and the knowledge needed to run them may not be widespread.... Can/could this be implemented in time, when profit margins in the dairy business are already slim?***

Frank Mitloehner: True, these things are expensive but you end up with an income stream (power/fuels). Many producers make them work financially.

***But there is also evidence that grazing can reduce GHG emissions from soil? (There was a recent article on this I think)***

Frank Mitloehner: Correct, there has been an article for N<sub>2</sub>O from grassland.

***FAO's report Figure 4.4 shows grassland temperate emissions lower than mixed temperate.***

Frank Mitloehner: True, but Fig 4.4 shows that globally there are great differences between grassland and mixed systems.

***Can you speak to pork production specifically and its potential level of contribution to GHG?***

Frank Mitloehner: Pork production affects GHG mainly via their waste. We need to find ways to reduce CH<sub>4</sub> from waste storage. Nitrification/denitrification systems and digesters might be good options.