Cutting methane emissions from cattle

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Cattle have bad breath and commonly suffer from severe, chronic flatus generating large amounts of methane, which is a greenhouse gas and a driver of anthropogenic global warming. There is an obvious answer to this problem, stop breeding cattle.

Unfortunately a large proportion of us enjoy our bovine dairy products and meat too much. Until synthetic products that are indistinguishable from the real thing become available and accepted by milk drinkers and steak fans, we will have to look into alternative approaches to reducing the carbon emissions from these creatures.

Writing in International Journal of Global Warming, Abdelmajid Moumen, Ghizlane Azizi, Kaoutar Ben Chekroun and Mourad Baghour of the Université Mohamed 1er, in Nador, Morocco, have reviewed the various approaches to reducing methane emissions from cattle and other livestock. These approaches involve improved genetic selection through breeding, modification of dietary composition, or through rumen microbial manipulation, vaccines against the methanogenic bacteria that generate the methane in these animals and various other techniques. It is possible that among the approaches or with a combination of approaches there might be a way to reduce the global burden of methane emissions from livestock.

"Methane emissions by livestock are very significant contributors to anthropogenic emissions of GHGs in many countries and the onus is increasingly on the farming industry to find ways of reducing these emissions," the researchers say. They point out that while changes in

nutrition and feed can play an important role on methane production by ruminants, manipulating the diet of these animals to reduce absolute methane emissions is a big challenge both practically and financially. However, inhibitors of the methanogenic bacteria have been demonstrated, although more detailed studies are needed urgently to demonstrate efficacy and to ensure that latent side effects might not be more deleterious to the environment, animal welfare and human health.

Fundamentally, however, the pressure to reduce the carbon footprint of livestock using any of these approaches will have to compete with the need for economic viability of the farming industry, at least until synthetic meat usurps the T-bone steak or the carnivores among us go vegetarian.

More information: Abdelmajid Moumen et al. The effects of livestock methane emission on the global warming: a review, *International Journal of Global Warming* (2016). DOI: 10.1504/IJGW.2016.074956

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