

# Camels emit less methane than cows or sheep

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Dromedary camel, *Camelus dromedarius*. Credit: Jjron/Wikipedia

When digesting ruminants exhale methane. Their contribution to this global greenhouse gas is considerable. So far the assumption had been that camels with similar digestion produce the same amount of the climate-damaging gas. However, researchers at the University of Zurich and ETH Zurich have now shown camels release less methane than ruminants.

Ruminant cows and sheep account for a major proportion of the methane produced around the world. Currently around 20 percent of global methane emissions stem from [ruminants](#). In the atmosphere methane contributes to the greenhouse effect – that's why researchers

are looking for ways of reducing methane production by ruminants. Comparatively little is known about the methane production of other animal species – but one thing seems to be clear: Ruminants produce more of the gas per amount of converted feed than other herbivores.

The only other animal group that regularly "ruminates" like ruminants are [camels](#). This includes alpacas, llamas, dromedaries and Bactrian camels. They, too, have multi-chambered forestomachs. They, too, regurgitate food from the forestomach in order to reduce it in size through renewed chewing. That's why people assumed up to now that camels produce a similar amount of methane to ruminants. Researchers at the University of Zurich and ETH Zurich have now examined this assumption in a project sponsored by the Swiss National Science Foundation and have come to the following conclusion: in absolute terms camels release less methane than cows and sheep of comparable body size. However, if one compares methane production with the amount of converted feed, then it is the same in both groups. "To calculate the proportion of methane produced, different estimated values should be used for camels than those used for ruminants", explains Marcus Clauss from the Vetsuisse Faculty of the University of Zurich.

## **Lower metabolism – less feed – less methane**

The modified calculation of the "methane budget" may be important for those countries with lots of camels – like the dromedaries in the Middle East and in Australia, or the alpacas and llamas in various South American countries. In cooperation with Zurich Zoo and private camel keepers, scientists from the University of Zurich and ETH Zurich have measured [methane production](#) in three types of camelids. "The results show us that camels have a lower metabolism. Hence, they need less feed and release less [methane](#) than our domestic ruminants", says the vet Marcus Clauss. The lower metabolism of camels could explain why they thrive particularly in areas with a shortage of food – desert and barren

mountain regions.

**More information:** Marie T. Dittmann, Ullrich Runge, Richard A. Lang, Dario Moser, Cordula Galeffi, Michael Kreuzer, Marcus Clauss. "Methane emission by camelids." *PLOS ONE*. April 9, 2014. doi: [dx.plos.org/10.1371/journal.pone.0094363](https://doi.org/10.1371/journal.pone.0094363)

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