

Drugs and dung a bad mix for climate: study

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Lab studies revealed that dung pats from animals given a common antibiotic gave off more than double the methane, a potent greenhouse gas

Scientists have discovered a potential threat to Earth's climate lurking in a dark and smelly place: the dung of cattle treated with antibiotics, a study said Wednesday.

Lab studies revealed that dung pats from animals given a common antibiotic gave off more than double the methane, a [potent greenhouse gas](#), than those of non-treated cows, a team wrote in the journal

Proceedings of the Royal Society B.

This highlights another danger of routinely using [antibiotics](#) on livestock, a practice which has already created a wave of drug resistance in humans.

"Antibiotics are extensively used in agriculture to promote growth and to treat or prevent livestock disease, yet they may have major consequences for human and environmental health," wrote the study authors.

"We provide the first demonstration that antibiotics can increase dung emissions of methane."

The team collected dung from 10 cows—five given a three-day course of a common broad-spectrum antibiotic called tetracycline, and five given none.

In decidedly unglamorous work, they divided the dung into smaller pats, which they placed in open buckets in the field along with a few empty ones, to measure and compare flows of gases like carbon dioxide, methane and nitrous oxide.



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Antibiotic treatment "consistently increased methane emissions," the authors found—by as much as 1.8-fold.

Agriculture is responsible for about a fifth of global [greenhouse gas emissions](#).

Methane, which is about 20 times more efficient at trapping solar heat than the most prevalent [greenhouse gas carbon dioxide](#), accounts for 40 percent of farming emissions.

It comes largely from belching cattle and rice cultivation.

The researchers speculated that antibiotics may change microbial activity

within the cow gut. This suggested it may also be increasing [methane emissions](#) from belching, already known to be much higher than from dung.

Further studies were needed to quantify the contribution of agricultural antibiotic use to global warming, the team suggested.

The routine use of antibiotics in farmed animals in countries like the United States is blamed for contributing to the spread of [drug resistance](#) in humans—turning easily-treatable diseases into potential killers.

Bacteria which make humans and animals ill can develop resistance when medicines are administered unnecessarily, for too short a period or in too small a dose.

More information: Treating cattle with antibiotics affects greenhouse gas emissions, and microbiota in dung and dung beetles, *Proceedings of the Royal Society B*, [rspb.royalsocietypublishing.or ...
.1098/rspb.2016.0150](https://rspb.royalsocietypublishing.org/.../1098/rspb.2016.0150)

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