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10 Minutes for the Planet

Methane: a cow's dirty secret ©

by Sarah Heath

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Hello! I'm Sarah Heath and you're listening to 10 Minutes for the Planet on EnglishWaves.

Methane is a chemical compound, which is mostly found underground or under the sea floor and is the main constituent of natural gas. It is used largely in our homes in ovens and heating systems, for example, but also for electricity production when it is burned as a fuel. It has been proven to be more efficient than other hydrocarbons in terms of having a lower level of carbon dioxide released during combustion.

However, while increased levels of carbon dioxide in the earth's atmosphere have been proven to contribute to global warming, methane gas is around 86-105 times more powerful in terms of trapping heat when measured over a 20 year period which, according to the International Panel on Climate Change, has led this odourless gas to account for approximately 16% of global greenhouse gas emissions in 2015.

Methane is emitted into the atmosphere via various means including leaks in natural gas systems and natural wetlands but the raising of livestock for dairy and meat is a major contributing factor. A feature-length documentary, Cowspiracy: The Sustainability Secret, which was executively produced by well-known actor and environmentalist, Leonardo Di Caprio, reveals that the industry which causes more destruction than any other, including to a large part through methane production, is animal agriculture.

And why is this? What is it that is producing all this methane? One answer is…cows! A single cow can produce up to 400 litres of methane a day which is enough to power a small fridge for 24 hours. And when you consider that in the United States alone, 42 million cows go through the factory-farmed system each year, that equates to enormous amounts of methane being released into the atmosphere. Some scientists blame the low-quality grain fed to cattle which cannot be digested properly, resulting in higher levels of belching and flatulence which produces methane gas. And cow burps are considerably worse than cow farts!

But it is not just the expulsion of methane from a cow's front and back end which is creating the problem: manure from this favourite source of meat plays a major role in methane emissions from this industry. Figures from the US, arguably the world's worst

culprit in the factory farming of cattle, show that 500 million tons of cow dung are excreted each year. That equates to a farm of 2,500 cows creating the same amount of waste as a city of over 400,000 people.

Some manure is used to spread on fields as fertiliser but increasingly large quantities are left to rot in slurry pits which encourage the growth of bacteria that ultimately produce twice as much methane.

Atmosphere-harming gases aside, the meat and dairy industry has some staggeringly environmentally-irresponsible statistics: 2,500 litres of water are needed to produce half a kilo of beef; 1,000 litres of water for 4 litres of milk; 82% of starving children in the world live in countries which produce food for animals which are ultimately consumed by people in the first world, and livestock uses 45% of total land surface here on earth.

Reducing methane emissions would create tangible benefits almost immediately according to scientists and to combat this ongoing increase in methane emissions from the agriculture sector, researchers are investigating new alternatives to cattle feed, such as products made with seaweed, and even genetic engineering in an attempt to breed cows which are less gassy.

In India, the National Dairy Development Board has developed a new software tool which helps to balance the diet of India's 2.4 million cows with the aim of reducing methane emissions but also to increase milk output. And it seems to be working!

Studies are also underway to investigate the efficiency of converting livestock waste into biogas as a source of renewable energy. Spanish scientists have discovered that adding beetroots to cow manure, significantly increases methane production through anaerobic digesters generating renewable power. One farmer in Wales is using such a system so effectively that he is returning electricity back to the grid from energy produced from the slurry of his 300 cows – electricity which is then locally used by 80 homes.

Initiatives such as Green Monday, which encourages consumers to avoid animal products on this one day of the week may also help to gradually reduce the problem and according to French environmentalist Yann Arthus-Bertrand is "a personal contribution to the earth".