

Theme 2
"At the farm"
interview with **Michelle Cain**



TAKE A BITE OUT OF CLIMATE CHANGE

#TakeABiteAtHome

AT HOME



INTRODUCING...

Hi, I'm Michelle. I'm an expert in climate science, and how different greenhouse gases are produced and impact the planet!

INTERVIEW

On the Work-it-out sheet for 'At the Farm' we learnt that cows burp methane. How important is methane in causing climate change?

When we look at the amount of each gas in the atmosphere compared to the year 1750 (before the industrial revolution), methane is the 2nd most important warming gas after carbon dioxide. Methane is a strongly warming gas, but it is also destroyed by chemical reactions in the atmosphere. If we stopped releasing it, the amount left in the atmosphere from human activities would roughly halve after 10 years. That would mean the temperature would go down. This is different to CO₂, which stays and keeps warming the atmosphere for hundreds of years after it's released.

Is there a way to stop cows burping methane?

The way that cows, sheep and deer digest grass uses microbes which produce methane. There is no way to completely stop this, because it's how they digest their food. We can select breeds of cow which make less methane, and give them specially developed feed which results in lower methane too. We can also give the cows different types of plants. Farm management and animal health is also very important to reduce other greenhouse gases, such as nitrous oxide (a powerful greenhouse gas generated by manure and artificial fertiliser - see India Langley interview) and carbon dioxide (associated mostly with making artificial fertiliser for crops).

What are other sources of methane on our planet?

Human sources are agriculture, human and agricultural waste processing, and fossil fuel production and use. The largest natural source is wetlands (like swamps and bogs), with smaller amounts released from termites, permafrost, wildfires and oceans. This is an infographic showing the sources: <https://tinyurl.com/y8jw6mer>

SO, WHAT SHOULD WE DO?

The most important thing you can do is to tell people, like your friends and your parents, what you think about climate change. You could then do things together, like choosing to walk or cycle instead of driving in the car wherever you can. The people in charge of making decisions about building cities and running businesses need to know how strongly you feel about stopping climate change. You could write a letter to your MP or a local business, as they have the power to decide to change to renewable energy, install electric car charging points, or serve more climate-friendly meals, for example. They can, and do, make changes based on what their communities and customers think.

PROFILE

Dr Michelle Cain is a Lecturer at the University of Cranfield and is an expert in computer modelling of how different greenhouse gases warm the climate. She has also appeared on TV, radio, podcasts and videos as an expert on pollutant gases.

