

NATIONAL LIVESTOCK METHANE PROGRAM

PROJECT FACT SHEET

Paddock-based measurement of methane emissions in livestock

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About the project

Accurate and efficient measurement of greenhouse gases (GHG) is an essential part of testing strategies aimed at reducing emissions from livestock. However most current methods are laboratory-based and there are few designed to measure methane and carbon dioxide in the field.

This project will address this gap by validating and optimising a new paddock-based system developed in the US for measuring emission from cattle, the GreenFeed Emission Monitoring (GEM) unit. It will confirm the accuracy of the unit as well as ensuring it is suitable for Australian conditions, including long-term use in remote grazing environments.

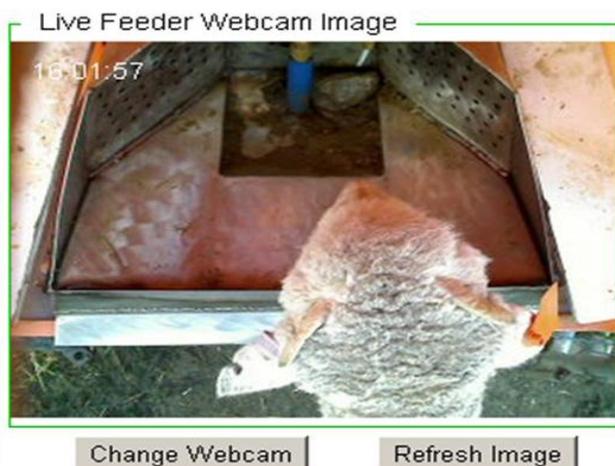
In addition, this project will develop a GEM unit specifically designed for measuring emissions from sheep. This will be an important breakthrough as there are currently few tools available to accurately measure emissions from these animals.

What does it mean for producers?

Adoption of this research means producers will have greater confidence in the effectiveness of the methane-reducing practices they may choose to use in their production systems. This will assist those producers who are potentially entitled to claim carbon credits under the Carbon Farming Initiative (CFI) and the future Emissions Reduction Fund (ERF).

Location(s):

Research is being undertaken at UNE in Armidale and Glen Innes NSW, and Charters Towers QLD.



The GreenFeed unit has a webcam, so researchers can monitor how animals are feeding: UNE



Trial set-up for use of cattle GreenFeed for sheep. Individual sheep go in freely and behaviour is very similar to that of cattle. Source: UNE

BACKGROUND FACTS ABOUT ...

The National Livestock Methane Program

The National Livestock Methane Program (NLMP) has been developed to provide producers with practical strategies and tools to help them lower methane emissions while increasing productivity and profitability.

The program consists of 16 research projects grouped into five streams including: measurement of methane, genetics, supplements, forages, and rumen microbiology. These projects commenced in mid-2012 and will run until May 2015.

The NLMP is funded by the Department of Agriculture. It is managed by MLA and receives support from 11 collaborating organisations. For more details on the projects and collaborators, please visit www.mla.com.au

The link between ruminant biology, methane and productivity

When cattle and sheep digest feed, between 2-10 per cent of the feed energy they consume is lost in the form of methane gas. This is caused by the activity of micro-organisms that naturally live in the animals' stomach (rumen) and assist with digestion.

The methane gas (CH₄) is belched out by the animal and into the atmosphere. Simply put, they are 'leaking' feed energy, rather than converting it to muscle. Scientists are working to reduce this loss of feed energy by developing treatments to lower methane emissions. Preliminary research results indicate that some treatments can reduce methane-related energy loss by more than 50 per cent.

Methane is also a potent greenhouse gas and in Australia about 10 per cent of all greenhouse gas emissions and two thirds of agricultural emissions come from methane produced by cattle and sheep. Knowledge and practices aimed at reducing methane emissions from livestock therefore serve the dual purpose of improving feed efficiency, productivity and farm income, while also helping lower Australia's greenhouse gas emissions.