NATIONAL LIVESTOCK METHANE PROGRAM

PROJECT FACT SHEET

Lowering methane emissions from livestock using algae-based feed

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About the project

Rich in minerals, vitamins, proteins, and polysaccharides, macro-algae (sea weeds) have excellent potential to be used as a supplement for livestock feeds. In addition, they have also been shown to increase the efficiency of feed conversion and reduce the production of methane in cattle and sheep.

This project will evaluate the potential of up to 20 different kinds of algae for their nutritive value and for their effect on reducing methane emissions in beef cattle. The algae species being used in this study were selected due to their natural abundance in local aquaculture systems or intertidal reefs around Townsville and their potential to be cultured under controlled conditions.

For species of algae that show strong potential, the project will undertake more detailed analysis to identify the precise quantities and combinations required to produce specific levels of methane reduction, while maintaining the efficiency of feed utilisation.

What does it mean for producers?

Producers will benefit from knowledge about the best algae-based feed supplements to use in their production system, and the precise impact on methane emissions and productivity.

The project will also provide data to support the development of a methodology that may allow producers using algae-based feed, particularly in feedlot production systems, to claim credits under the Carbon Farming Initiative (CFI) and the future Emissions Reduction Fund (ERF).

Location(s):

The research is being undertaken at two locations in Queensland:

1. The Australian Tropical Sciences Innovation Precinct, Townsville (a collaboration between CSIRO and James Cook University).
2. The School of Marine & Tropical Biology at James Cook University, Townsville.

Algae growing in ponds at the School of Marine & Tropical Biology at James Cook University

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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 (CH_4) 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.