

NATIONAL LIVESTOCK METHANE PROGRAM

PROJECT FACT SHEET

Using nitrate supplement to reduce methane from northern beef cattle

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About the project

In northern Australia, where the quality of forage during the dry season is generally low, livestock producers commonly provide additional nitrogen – in the form of urea – to improve pasture consumption and productivity in cattle. Research has shown that using nitrate salts instead of urea may provide a similar productivity benefit while generating lower methane emissions.

The feeding of nitrate to cattle can, however, be toxic in some circumstances. This project will therefore determine whether nitrate salts can be used as a practical and safe alternative to urea for low quality diets. It will attempt to identify an effective dose to lower methane emissions without compromising animal productivity or safety in both a controlled (penned) and uncontrolled (paddock) environment.

What does it mean for producers?

The knowledge from this project will enable northern Australia cattle producers to better understand how they can use nitrates salts in their production systems to lower methane emissions and maintain productivity.

The results from the project have been used to help develop a new methodology under the Carbon Farming Initiative (CFI) and the future Emissions Reduction Fund (ERF). The methodology was approved by the Government's Domestic Offset Integrity Commission on the 20th March, 2014, and is in the process of being turned into legislation, at which point producers can apply to use it and begin to claim carbon credits.

Location(s):

The research is being undertaken at the following locations:

1. Lansdown Research Station (CSIRO), Woodstock, Queensland
2. School of Veterinary and Biomedical Science (James Cook University), Townsville, Queensland
3. Fletcherview Research Station (James Cook University), Charters Towers, Queensland



*Cattle in north Queensland using a nitrate supplement 'lick-block'.
Source: Ridley AgriProducts*

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.