National Livestock Methane Program

The program

The National Livestock Methane Program is a national collaborative program focused on providing cattle and sheep producers with options to increase their productivity while reducing the emission of greenhouse gases from their livestock. Its objectives are to:

- Develop practical on-farm options to achieve a significant reduction in methane emissions from livestock

- Quantify the level of abatement achievable while at the same time increasing productivity

- Provide the science to underpin methodologies developed under the Carbon Farming Initiative - an Australian Government program to support livestock producers reducing emissions.

The program started on 28 June 2012 and will run for three years. It includes 17 research projects grouped in six themes:
- Coordination of the program
- Measurement
- Genetics
- Additives
- Forages
- Rumen Microbiology.

The National Livestock Methane Program is supported by funding from the Australian Government's *Filling the Research Gap* Program and is managed by Meat & Livestock Australia.
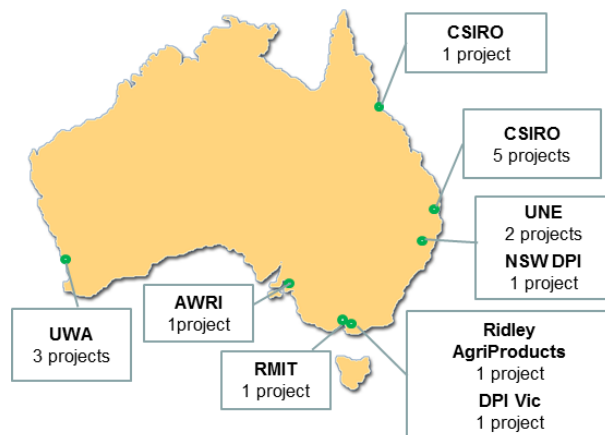
Methane emissions from cattle

Livestock enteric emissions account for about 10% of Australia's total greenhouse emissions and about two-thirds of the total emissions from agriculture – the result of digestion in ruminant animals.
The digestion process produces methane as a waste by-product. As well as being a most potent greenhouse gas, it is a waste of energy. If the energy used to produce methane could be redirected, animal performance could be improved.

National Livestock Methane Program projects:

Theme	Projects	Research organisation
Coordination of the NLMP	Coordination of the National Livestock Methane Project	MLA
Measurement	Measuring methane in the rumen under different production systems as a predictor of methane emissions	CSIRO
Measurement	Development of gas selective membranes (for intra ruminal capsules)	RMIT
Measurement	Evaluation and optimisation of Greenfeed Emission Monitoring units for measuring methane emissions from sheep and cattle	UNE
Genetics	Genetic technologies to reduce methane emissions from Australian beef cattle	NSWDPI
Supplements	Understanding methane reducing tannins in enteric fermentation using grape marc as a model tannin source	AWRI
Supplements	Development of algae based functional foods for reducing enteric methane emissions from cattle	CSIRO
Supplements	Supplemenation with tea saponins and statins to reduce methane emissions from ruminants	CSIRO
Supplements	Practical and sustainable considerations for the mitigation of methane emissions in the northern Australian beef herd using nitrate supplements	Ridleys Agriproducts
Supplements	Strategic science to develop dietary nitrate and defaunation as mitigation methodologies for grazing ruminants	UNE
Supplements	Enteric methane mitigation strategies through manipulation of feeding systems for ruminant production in southern Australia	VicDPI
Forages	Impacts of leucaena plantations on greenhouse gas emissions and carbon sequestration in northern Australian cattle production systems	CSIRO
Forages	Best choice shrub and inter-row species for reducing emissions and emissions intensity	UWA
Forages	The mechanism of antimethanogenic effects of bioactive plants and products on methane production in the rumen	UWA
Forages	Efficient Livestock and Low Emissions from southern grazing systems	UWA
Rumen	Culture independent metagenomic approaches for understanding the functional metabolic potential of methanogen communities in ruminant livestock	CSIRO
Rumen	Comparative analyses of rumen microbiomes to mitigate methane and improve feed utilization	CSIRO

Location of National Livestock Methane Program research projects

CSIRO
1 project

CSIRO
5 projects

UNE
2 projects
NSW DPI
1 project

AWRI
1 project

UWA
3 projects

RMIT
1 project

Ridley AgriProducts
1 project
DPI Vic
1 project

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