



Australian Government  
Department of Agriculture



THE UNIVERSITY OF WESTERN AUSTRALIA



# NATIONAL LIVESTOCK METHANE PROGRAM

## PROJECT FACT SHEET

### Best shrub and inter-row species to reduce methane emissions in livestock grazing systems

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#### About the project

It has been known for some time that certain Australian shrubs and introduced grazing species can lower methane emissions in livestock. Past research has shown three-fold reductions in emissions intensity from sheep grazing a shrub-based forage system compared to a mature autumn pasture with supplementary grain.

This project will quantify the impact of a selection of native shrubs with ‘anti-methanogenic’ potential (i.e. producing less methane) grown in association with anti-methanogenic legumes on both methane emissions and productivity in grazing systems in south west Western Australia.

The project will conduct laboratory-based analyses of 10 shrub and pasture species to get a detailed understanding of the precise nutritive value and anti-methanogenic potential of each species. Field trials will quantify changes in methane emission and productivity at the farm scale.

#### What does it mean for producers?

Using the knowledge generated from this project, livestock producers will be able to develop grazing systems based on a mixture of shrubs and pasture species that reduce methane emission while maintaining or improving productivity during the late summer-autumn feed-gap period. Because the project will quantify the extent of methane reduction, the data may be also used as the basis for a methodology to allow producers to potentially claim credits under the Carbon Farming Initiative (CFI) and the future Emissions Reduction Fund (ERF).

## Location(s):

Research is being undertaken in two locations across Western Australia:

1. UWA Future Farm, Pingelly, WA (main research site)
2. CSIRO/UWA, Floreat, Perth, WA (laboratory analyses)



*Shrubs and mature inter-row forage at the research site, Pingelly, WA.  
Source: UWA*

## 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](http://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<sub>4</sub>) is belched out by the animal and into the atmosphere. Simply put, they are 'leaking' feed energy, rather than converting it to muscle or wool. 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.