

# DairyNZ facility a world first in methane measurement

A groundbreaking methane research facility in Hamilton has been established at DairyNZ's Lye Farm. It's already yielding some interesting results from recent studies and has great potential for further research projects.



Managing and reducing dairy cows' methane emissions is crucial to the future of sustainable and profitable dairy farming in New Zealand. That's why, in 2015, DairyNZ worked with a collaborator in the USA to develop a novel system for measuring methane. This equipment, installed at DairyNZ's Lye Farm research facility two years ago, is a world first and it's already proving its worth.

The equipment and the experiments undertaken to date were funded by New Zealand's government to support the objectives of the Livestock Research Group of the Global Research Alliance on Agricultural Greenhouse Gases and the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC).

The Lye Farm facility involves multiple feeding stations that measure methane from the cow's breath while the cow is eating at different times each day. The facility's new equipment was compared for accuracy with 'respiration chambers' in collaboration with AgResearch, as respiration chambers are regarded as the 'gold standard' of measurement. The equipment passed with flying colours, with very similar daily methane emissions per kilogram (kg) of intake in both systems.

The facility at Lye Farm offers many advantages over respiration chambers. It can evaluate 30 animals at a time, whereas respiration chambers can test only four. It's also easier to test a wide range of feeds in the new facility and animals can be maintained on a treatment for much longer.

As part of her Masters degree, funded by the NZAGRC, researcher Holly Flay recently evaluated the effects of dairy breed on methane emissions and what would happen to methane emissions if we selected cows for improved feed conversion



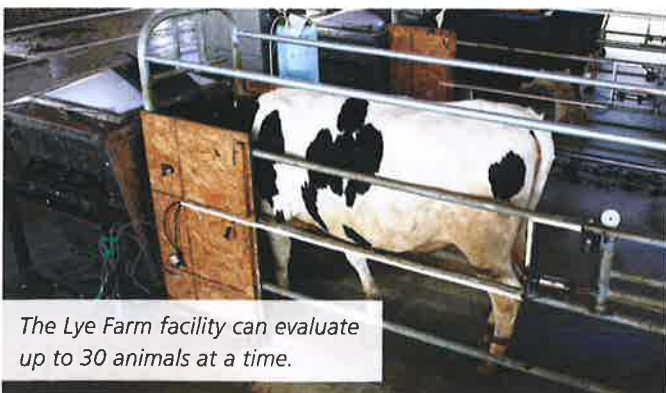
*Methane from the cow's breath is measured as she eats.*

efficiency. Unfortunately, there were no 'lightbulb moments'.

Breed did not affect methane production: for each kg eaten, Jersey and Holstein-Friesian cattle released 22 grams of methane per kg of dry matter intake. Similarly, selecting animals for improved feed conversion efficiency didn't affect how much methane the animal produced each day.

DairyNZ is looking forward to realising the full potential of the Lye Farm research facility to carry out a range of other valuable projects. Future studies could include trialling compounds to reduce methane emissions in pasture-fed dairy cows.

Find out more about DairyNZ's involvement in *Dairy Action for Climate Change* and our other efforts to address dairying and climate change – see [dairynz.co.nz/climate](http://dairynz.co.nz/climate)



*The Lye Farm facility can evaluate up to 30 animals at a time.*

## Key points



**Three key advantages of DairyNZ's Lye Farm methane-testing facility:**

1. It can evaluate up to 30 animals at a time.
2. It supports longer evaluation sessions.
3. It makes it easier to test a wide range of feeds.