Minutes of the 6th Methane Phenotype Working Group (MPWG)

By Phone 2200 GMT 1st February 2013

Present: John Basarab, Yvette de Haas, Hutton Oddy, Grant Shackell, Kristi Cammack, Jan Lassen, John McEwan, Natalie Pickering

Apologies: Adrian Cookson, Ben Hayes, Steve Miller, Cesar Pinares, Marcos Vinicius da Silva, Phil Vercoe, Roger Hegarty.

General Discussion:

For Feed Intake there seems to be enough data for the paper available now, and enough for methane to start writing up as well.

Aim: to have an advanced draft on FI and methane measurements by end of March.

Aim: Relevant people to write up their section and circulate in 2 weeks (15th Feb). Next meeting in 3-4 weeks’ time. Natalie to circulate potential dates.

- Hutton has been working on Kristi’s FI data on sheep and his own data.
  - On Kristi’s data: looked at the 2 diets and repeatability at 10 day intervals.
    - Repeatabilities ~ 0.3 to 0.4 for FI.
    - Kristi to review and write up.
  - Other sheep studies repeatabilities of 0.7 when record refused feed and 0.4 to 0.5 on pasture when use markers.
  - Hutton to write up the Australian sheep data.
- John Basarab has already done a summary of the Canadian side.
  - Has emailed National dairy herd committee, which have FI and milk protein etc data. This is an back up data source that could be used.
- Jan: FI variation in dairy cattle, there is 180 cows being measured. Jan will describe the procedure, and will check to see if any analysis has been done.
  - Will also update the document on measuring methane during milking.
  - Hutton asked if there is an impact on day to day methane from fermentation or FI. Answer: there is an impact of roughage and concentrated diet on the day to day methane, plus individual variation.
- Yvette: has ~20 years of nutrition data, will start looking at mid Feb. Also has 4 months of methane measurements.
- Hutton has been collecting short term boxes and chamber methane measurements, can start looking at.
  - Dorothy Robinson has also been working on genetic parameter paper for short term (1hr) chamber measurements. Hutton can pull out some data including CO₂ data from this
- John McEwan and co. have analysed 1255 animals measured for methane between 3 and 8 or 9 times with season and between seasons and years.
  - Have good estimates of h² and repeatability
- Several weeks apart repeatability very accurate per kg DMI = 0.26. values are constant across years. Get higher estimates for gross methane.
- Also have brief measurements using same chambers and feed.
- Have just started PAC chambers but won’t have anything for the paper.
- John McEwan and co. preliminary results on VFA’s
  - Not repeatable or have good phenotypic correlations with methane. But high $h^2$ and genetic correlations with methane. Currently doing further analysis on mMol basis.
  - Methane emissions are on whole day basis as gCH$_4$/kgDMI.
  - VFAs taken from sample at end of measurement period. Feed at 0 and 6 hours, sample taken at 24hr.

**Other business:**

Next ASGGN full meeting, to be held 27th June 2013 in Dublin, Ireland.

A 1-day workshop is planned as a satellite to the Greenhouse Gases in Animal Agriculture Conference being held immediately prior.

The agenda will cover a combination of science and business.

Tentatively, the workshop is titled 'Measurement of methane in individual animals for the purposes of establishing the parameters to permit genetic selection’. This will complement a short workshop on ‘new/alternative techniques’ (session 7) within the main Conference programme.

During the meeting there will also be a business/planning session. At this it is proposed that the management of the network will change.


The website is regularly updated.

**Action:** Grant has set up a page for each country and people should send in some information on programs, key people, links, photos etc for their countries page.