Minutes of the 12th Methane Phenotype Working Group (MPWG)

By Phone 2200 GMT 4th May 2013


Apologies: Jan Lassen, Steve Miller, Adrian Cookson, Ben Hayes, Phil Vercoe, Marcos Vinicius da Silva, John Basarab.

General Discussion:
MPWG white paper:
- Need draft paper out a week before conference. Things missing still are:
  - Genomic section
  - Recommendations/research gaps
    - Correlation between methane emissions under different feeding conditions and production systems. To date we have results from various systems but none that overlap to provide comparisons/correlations.
    - Understanding of genetic relationships between different systems. Could be addressed by: selection lines, same animals different systems, need large number of animals….
    - Microeconomic and social objectives
    - Long term methane measurements (weeks-months, not 48hrs)
    - Others…

Action: People should send in bullet points/paragraphs on research gaps they see to Natalie/Hutton

Plan – NZ contingent and whoever else available at 4pm Friday NZ time will have a phone call.
- Before then based on comments submitted, will:
  - Make a truncated genomic selection section
  - Draft up some conclusions
    - 3 production systems
      - Off pasture
      - Respiration chambers
      - TMR dairy cows i.e. Yvette, Jan, Phil system
    - We expect genetic parameters will differ between systems. Research gap-how they interrelate.
    - Need to say how optimise each production system
    - What are the cost/benefits of each component in the breeding objective
      - Micro-economic: if just optimise micro-eco it may not help social. Methane emission not going to be solved just by economic signal.
      - Social
    - Need a clear message that selection for methane works and by doing so not going to stuff up other production traits.
    - Methane yield which was thought to be stable actually isn’t. Variable feeding conditions and short measures decreases repeatability compared to Maintenance feeding.
    - Feed intake requires at least 35 days of data to stabilise.
• But how accurate do you need the trait?
• What is the minimum you need to make genetic progress?
• Same questions could be applied to methane measurements
  - NZ has shown under controlled conditions (probably over the top controls) methane is $h^2$ and repeatable. Shown that differences are seen on pasture. It is feasible to change this trait. But a few questions to answer:
    • How do we make measurements cheaper?
    • If we can consistently rank animals on short term measurement then we would go ahead and implement.
    • How do we treat animals prior to measurement in PAC? Need to test if stable under a variety of feed/season/environmental conditions.
• New draft paper before Weds 12th June.

Cost application: Yvette, Jan and co
• Successful 😊
• Paying for network meetings, travel etc
• Aim: large scale individual methane measurements for estimating genetic parameters
  - 1. Focus on what influences methane, including help from nutritionist
  - 2. Protocols for measurement: laser, FITR, SF6, chambers and combine into one database
  - 3. Predictors for methane
  - 4. Breeding objective definition

Dublin:
Yvette, Hutton and Roger arrive on Thursday.
NZ contingent arrive Friday afternoon.