Methagene Workshop on Comparison of Methods for Measuring Methane

Tuesday 19 – Wednesday 20 January 2016

Kegworth Hotel, Packington Hill, Kegworth DE74 2DF, UK

Aim of WG2
"To generate, discuss and develop protocols for collection, harmonisation, comparison, calibration and storage of methane emission measurements on individual animals made using different techniques and measurement strategies".

Outline Programme
Day 1: Tuesday 19 January
09:30 Arrival and coffee
10:30 Session 1:
>Introductions and aims of workshop
>Brief presentations on what each person has done
>Discussion

13:00 Lunch
14:00 Session 2:
>What does each method actually measure?
>Think about trait definitions
>Ways to compare methods
>What comparisons are already in the literature?
>Links through other measurements (e.g. milk yield, live weight, feed intake)
>Data available within the group and outside
>Start to compare methods (Practical)
>Discussion of Day 1 and plans for Day 2

17:30 End of session
19:30 Evening meal

Day 2: Wednesday 20 January
09:00 Session 3:
>Further comparison of methods (Practical)
>Discussion of comparisons
>Plan report and publication

12:30 Lunch
13:30 Session 4:
>Further work and meetings
>Assign tasks and agree timetable
>End of formal workshop

15:00 End of workshop
Participants are welcome to use the meeting room until 17:00, or leave when they wish.

From the Methagene Proposal

WG2. Comparison and calibration of measurements: to generate, discuss and develop protocols for collection, harmonisation, comparison, calibration and storage of methane emission measurements on individual animals made using different techniques and measurement strategies.

In this WG2 some important issues are addressed. The main issue is that, at the moment, the trait 'methane output' cannot be assumed as the same trait across countries or studies, so correlations between estimates of the trait are not unity. The main reasons for these discrepancies are that the trait is not measured in the same way across countries, and that different statistical and evaluation models are used across countries. Therefore, trait and model harmonization are needed.

The following further tasks have been identified for WG2:

- To standardize methane measurements across countries and establish equivalence of different methodology. The intention is not to restrict research to one technique, which would entail discarding valuable data, but to produce conversion factors for use when fitting a joint evaluation model
- To harmonize trait definitions across countries. For instance, defining methane output as output per unit of body weight, feed intake or milk production across countries
- To harmonise models used for evaluation of methane output across countries. Models used currently are different due to environmental components such as the herd structure, recording systems and breeds. Considerable discussions, interactions and research are required to develop a unified model for the traits of interest.
- To establish correlations when traits are measured, defined, and modelled in the same way. The hypothesis is that environments and production systems are sufficiently different across countries that the traits expressed to some extent depend on a different combination of genes in the different countries. This leads to consideration of a genotype by environment interaction (GxE).