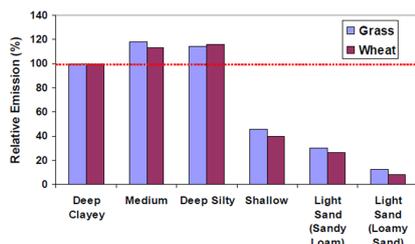


The Greenhouse Gas Platform is a 5-year research programme funded by the UK government to generate new country-specific measured and modelled Emission Factors for methane (CH₄) and nitrous oxide (N₂O) from agriculture. The main objective of the research is the development of an improved Agricultural Greenhouse Gas Inventory, that uses appropriate country and practice-specific emission factors and that will reflect the adoption of mitigation practices by the agricultural industry, enabling forecasting and monitoring of performance against the wider UK target emissions reductions set by the UK Climate Change Act 2008. The Platform comprises four closely linked projects; this newsletter provides an update and more information on the work that has been carried out since the Programme began in November 2010:

Data synthesis, modelling and management project:

The AC0114 project team held workshops on National Level Statistics in December (2010) and Inventory User Requirements in March. The workshops were attended by representatives from Defra and the Devolved Administrations, the agricultural industry and invited researchers. Delegates discussed the sharing of data and plans for representing farming systems in an improved inventory. Computer models are also being used by the project team at Scottish Agricultural College (SAC) to explore the sensitivities of N₂O emissions to UK soil type and rainfall, to help plan the location of field experiments.

User Requirements Workshop, Birmingham, March 2011 and example results from modelling at SAC to explore the effect of soil type on levels of N₂O emissions:



Inventory delivery project:

The uptake of improved data and methodologies within our existing reporting mechanism is an important part of the Greenhouse Gas Platform. The Inventory Delivery project team have been working closely with the other Platform projects to ascertain how the scope and functionality of our existing system can be improved upon. Tom Misselbrook (Rothamsted Research) is leading this process.

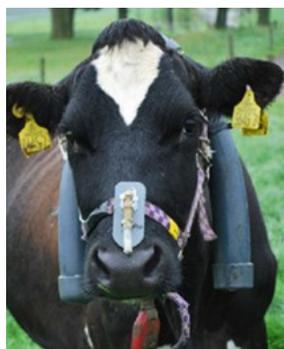
Engagement with Global Research Community:

Representatives from the Greenhouse Gas Platform travelled to New Zealand to participate in two Global Research Alliance workshops. David Chadwick (Rothamsted Research) attended a workshop to discuss the standardisation of approaches for chamber measurement methodologies to measure N₂O emissions from soil. This engagement will help to promote standardised methodologies across the world, to enable more meaningful sharing of data. Eileen Wall (SAC) attended a workshop to learn key lessons on how to explore the role of genetics in emissions from livestock systems, and the options and limitations of using genetic selection to reduce enteric CH₄. There was general agreement that genetics of animals (dairy, sheep, beef) could be an important contributor to the reduction of CH₄ and that we need to understand more about rumen microbial genomics to be able to value its contribution. For more information on the Global Research Alliance on Agricultural Greenhouse Gases please visit www.globalresearchalliance.org.

Methane ResearCH₄ project:

During the first six months of the project partner organisations have been developing experimental facilities and protocols, and detailed measurements on beef and dairy cattle are underway at various UK sites. Workshops have been held in Northern Ireland and Scotland, to ensure best practice is used for marker techniques needed to measure methane emissions and feed intake in grazing animals.

A workshop was held at AFBI, Hillsborough on the use of the SF₆ marker technique for measuring methane emissions from grazing animals:



Nitrous Oxide InveN₂Ory project:

The project team are currently investigating the relationship between fertiliser N application rate and N₂O emissions at five grassland and arable sites in Northern Ireland (AFBI), Scotland (SAC) and England (ADAS, Rothamsted Research). The effect of fertiliser form (urea and ammonium nitrate) on N₂O emissions is also being assessed in addition to mitigation practices, including the use of a nitrification inhibitor and little-and-often timing strategies. The University of East Anglia are also taking samples of drainage and river water in three UK catchments to investigate the link between in-stream nitrogen concentrations and indirect N₂O emissions.

N₂O chambers being sampled on a winter wheat crop in Rosemaund, England (ADAS) and samples being taken from the River Wensum in Norfolk (University of East Anglia):

