SMEthane

Technological platform to develop nutritional additives to reduce methane emissions from ruminants

FP7-SME-2010-1 262270

3rd workshop

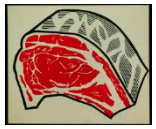
4-5 October2012

Hotel Oceania, Clermont-Ferrand, France

SEVENTH FRAMEWORK PROGRAMME

SMEthane

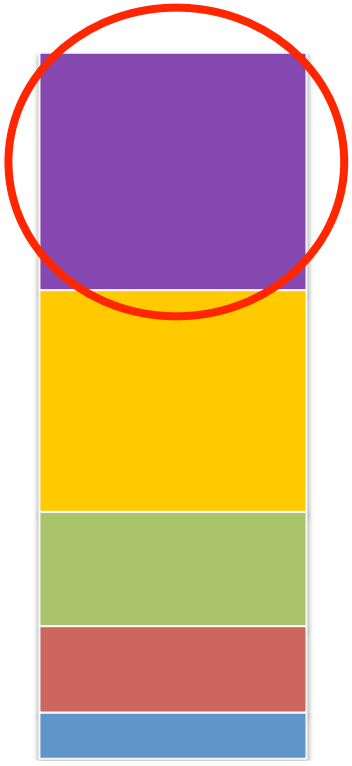
by 2050:



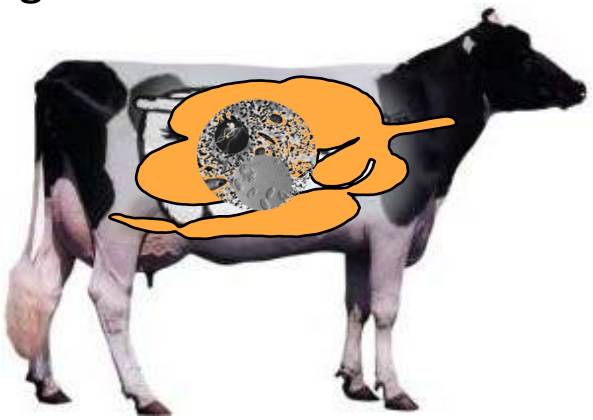
↑ **70 %**

↑ **50 %**

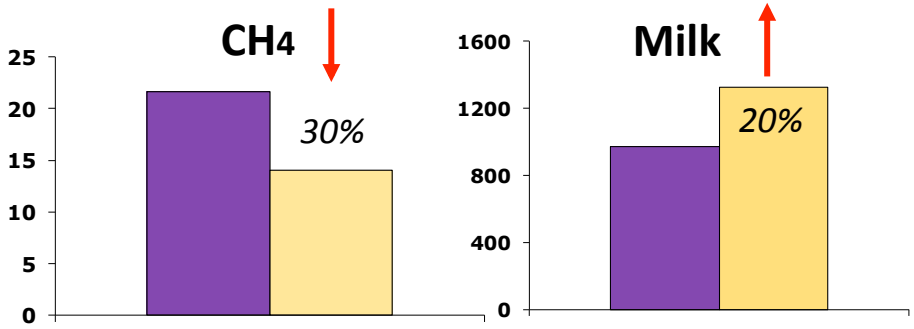
Animal Production: **18 %** of total Greenhouse gases emissions



- **Enteric CH_4**
- N_2O soil
- Manure
- Fertilizers
- Others



2-15 %



**Abecia et al., 2012 J Dairy Science*

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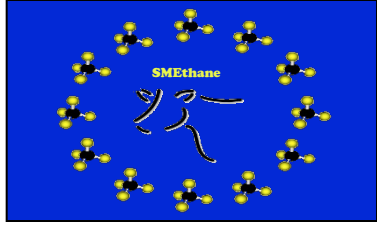
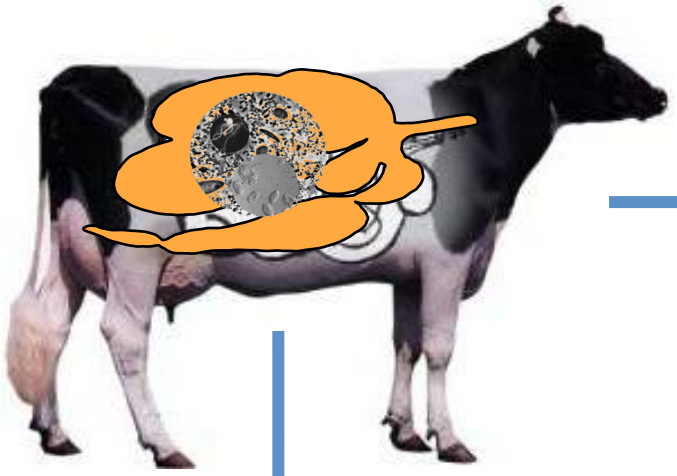


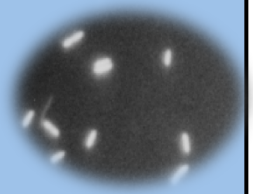


Bacteria
~300 species
10^{10} to 10^{11}cells/ml

Anaerobic Fungi
~30 species
<10^5 cells/ml

Ciliate Protozoa
~40 species
<10^5 cells/ml

Methanogenic Archaea
~6 species
10^6 to 10^8 cells/ml



Degradation of Carbohydrates

CO_2

H_2

Methanogenic archaea

CH_4

Propionate

Glucose

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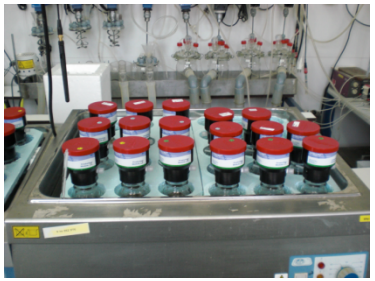
Long term

42 days

Short term

7days

WP 4 RTD — IN VIVO– long time persistence — 21+ 20



WP 3 RTD — Effectiveness IN VITRO — 25

WP 2 RTD — Means of application . Stability over time — 13

CSIC · INRA Institut National de la Recherche Agronomique · UNIVERSITEIT GENT · PRIFYSGOL ABERYSTWYTH UNIVERSITY · ILVO · agolin® · DOMCA · neem BIOTECH · phytosynthèse · NOR-FEED

training Workshops

- 1st workshop – **Uk** - **Sept 2011**
- 2nd workshop – **Spain** - **Mar 2012**
- 3rd workshop – **France** – **Oct 2012**

• The Importance of Measuring Methane Production from Ruminant Livestock – the reason why we are doing this project.

• Effects of the use of plant extracts on animal productivity in different production systems

• Financial and regulatory barriers to the use of plant extracts in ruminant livestock

• …

SMEthane

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Forthcoming events

September 21-22, 2011
1st Workshop.

'The Importance of Measuring Methane Production from Ruminant Livestock – the reason why we are doing this project'

Contact Info

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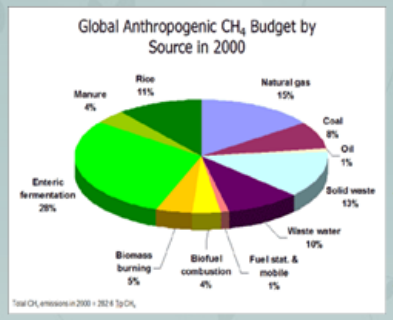
Languages

English

Welcome



SMEthane aims to provide a technological platform for SME's to develop and progress further knowledge on the successful use of nutritional additives to reduce methane (CH_4) emissions from ruminants. CH_4 is the second most important greenhouse gas, after CO2. At a global scale, livestock farming contributes up to 18% of total greenhouse gas emissions. The inhibition of CH_4 formation by ruminants has long been an objective of ruminant nutritionists, but a number of barriers to the development of novel dietary additives have been identified. SMEthane is designed to remove the restriction that SME's face in successfully developing and marketing novel compounds, in particular plant extracts. We will establish research and development platforms to allow SME's to determine: the means of delivery of such compounds in the diet, knowledge of the dose response curve for such compounds under different production systems, the persistence of the inhibitory effect of such compounds on CH_4 production over long periods of time and the potential 'side effects' such as change in flavour of the final animal product. SMEthane Research Consortium combines the capabilities of five major research and educational organizations from 4 European countries plus 6 enterprises with long experience in developing nutritional additives. The governance structure of the project has been established to ensure effective direction and management that maximizes the expertise and facilities available at each RTD to better meet SMEs' needs. Training and dissemination plan considered within SMEthane aim to provide training for the SME sector and its customer through different workshops based in key areas relevant to the development and usage of novel dietary additives to decrease CH_4 emissions. An Exploitation and Dissemination Team will be responsible for decisions on knowledge management issues such as patenting, licensing and other exploitations of the project results.

The project is coordinated by Dr. David R. Yáñez-Ruiz of CSIC in Spain and involves 10 partners:

- Aberystwyth University, United Kingdom (RTD perfomer)
- Agolin SA, Switzerland (SME)
- Consejo Superior de Investigaciones Científicas, Spain (RTD perfomer)
- DOMCA SA, Spain (SME)
- Eigen Vermogen Van Het Instituut Voor Landbouw En Visserijonderzoek, Belgium (RTD perfomer)

Workshop Program – Thursday 4th October 2012

(Lunch will be available from 1:30PM)

3:00pm Welcome Dr David Yanez Ruiz (CSIC Spain)

3.05pm Life Cycle Analysis as a wider picture, Dr Diego Morgavi, (INRA, France)

3:35pm Assessing the effect of plant extracts on methane production by in vitro screening tests: (dose) responses and sources of variability Prof Veerle Fievez, (Ghent, Belgium)

4:05pm Coffee

4:30pm Developing rapid in vivo screens to measure the effect of plant extracts on methane production. Dr Kenton Hart, (Aberystwyth, UK)

5:00pm Developing in vivo screens to measure the effect of plant extracts on methane production in cattle. Dr Nico Peiren, (ILVO,Belgium)

---------- SMEthane ON LINE CALCULATOR Prof Jamie Newbold

5:30pm Integrating the whole process: stability-in vitro- in vivo (short-long term).
General Discussion
Closing remarks Dr David Yanez-Ruiz (CSIC Spain)

8:00pm for 8:30pm

Evening Meal at Hôtel Oceania, Clermont Ferrand

SEVENTH FRAMEWORK PROGRAMME

SMEthane

Colloque

Flux d'azote et rejets de méthane liés à l'élevage

Colloque organisé par l'Institut national de la recherche agronomique
en partenariat
avec le Sommet de l'Elevage

vendredi 5 octobre 2012
9 h 30 - 12 h 30

Centre de Conférences - salle 1
Grande Halle d'Auvergne - Clermont-Ferrand/Cournon

INRA

SOMMET DE L'ÉLEVAGE

Programme

9 h 30 — Accueil des participants

9 h 50 — Introduction
Michel Beckert, président du Centre Inra de Clermont-Ferrand - Theix

10 h 00 ▸ Les flux d'azote liés aux élevages
Jean-Louis Peyraud, directeur de recherche, Inra de Rennes

Cette expertise scientifique collective portée par l'Inra à la demande des ministères en charge de l'Agriculture et de l'Ecologie, fait le point des connaissances sur les transformations et transferts de l'azote, vus comme une cascade, depuis l'élevage vers les sols, les eaux et l'atmosphère.

Echange avec la salle

11 h 15 ▸ Rejets de méthane liés à l'élevage : premiers résultats du projet européen SMethane
Cécile Martin, chargée de recherche, Inra de Clermont-Ferrand - Theix
Nicolas Tessier, NorFeed Sud France, partenaires du projet

Le projet européen SMethane est une plate-forme technologique qui contribue au développement d'additifs alimentaires réduisant les émissions de méthane chez les ruminants. La présentation du contexte général sur le méthane (importance dans la production des ruminants, GES, changement climatique,...) sera suivi d'une présentation du projet et des premiers résultats.

Echange avec la salle

12 h 00 — Discussion générale

Entrée libre

Le nombre de places est limité à 165 personnes

Renseignements :
communication@clermont.inra.fr
Tél. 04 73 62 46 35

SEVENTH FRAMEWORK
PROGRAMME

SMEthane

Enjoy the workshop