ICAR FEED AND GAS WG PRESENTS: AN ICAR WEBINAR ON 6 MARCH 2024

ICAR

ICAR FEED AND GAS WG WEBINAR

"USING MIR TO PREDICT METHANE EMISSIONS"

IN COLLABORATION WITH ICAR/IDF EXTRAMIR PROJECT

6 MARCH, 2024 (H. 14.00-16.00)

REGISTRATION AT:

HTTPS://US02WEB.ZOOM.US/WEBINAR/REGISTER/WN_MJHLDHLJSF290DJGX0LQLQ

CONCEPT NOTES

A Methane is a powerful greenhouse gas that contributes to climate change and air pollution. Reducing methane emissions from human activities, such as energy, agriculture, and waste, is crucial for achieving the worldwide climate goals and improving public health.

B One of the methods to estimate methane emissions from cows is to use mid-infrared (MIR) spectroscopy. MIR spectroscopy is a technique that measures the absorption of infrared radiation by molecules in a sample, such as milk.

C By analyzing the MIR spectra of cow milk, it could be possible to predict the amount of methane that the cow produces, based on the correlation between milk composition and methane emissions. This method is fast, cheap, and non-invasive, and can be applied to large-scale dairy farms to monitor and reduce their environmental impact.

D Using MIR to predict methane emission is a novel and promising approach that combines physics, chemistry, biology, and statistics. In this webinar, we will review the principles, applications, and challenges of this method, and provide some examples of how it can be used to improve the sustainability of dairy production.

WEBINAR

OPEN PARTICIPATION UPON REGISTRATION

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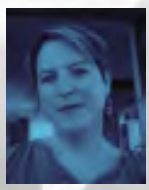
BACKGROUND OF THE SPEAKERS

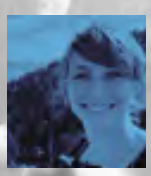
Per Waaben Hansen (Fellow Data Scientist at FOSS and Affiliated Associate Professor at Univ. of Copenhagen)

Per Waaben Hansen has worked within the field of chemometrics and spectroscopy for more than 30 years with particular focus on the analysis of milk and dairy products using NIR and MIR spectroscopy. He has been involved in the development of the algorithms and mathematical models used in routine dairy spectroscopy equipment, such as MilkoScan and ProcesScan.



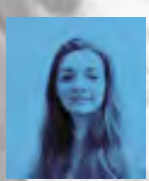
Hélène Soyeurt (Full Professor at the University of Liège)

Hélène Soyeurt is a Full Professor at the University of Liège in the Gembloux Agro-Bio Tech campus located in Belgium. She teaches the courses related to algorithmics and machine learning. Since 2005, she is working on the developments of new tools to extend the use of the milk mid-infrared spectrometry in dairy farming. She was the first to develop equations to predict fatty acids from the milk mid-infrared spectra. Due to her expertise, she is the chair of the joined IDF and ICAR project called ExtraMIR.



Amelie Vanlierde (Researcher at the Walloon Agricultural Research Center, Belgium)

She worked for ten years in the milk laboratory team to develop models based on milk MIR spectra to predict phenotypes of interest and in 2019 she achieved a PhD thesis focusing on the development of proxies to estimate enteric CH4 emissions from milk mid infrared spectra. She is now part of the Animal production Unit of CRA-W.



Maria Frizzarin (post-doc in Teagasc, Ireland)

Maria Frizzarin is a post-doc in Teagasc (Ireland). She has a bachelor and master degree in animal science and a PhD in mathematics and statistics. During her PhD she worked on developing prediction equations for milk and animal phenotypes.

Filippo Miglior (Senior Advisor and Adjunct Professor, Lactanet and Univ of Guelph)

Experience in the field: over 10yrs experience in leading large research projects that included use of milk MIR to predict new phenotypes for dairy cattle breeding, recently been awarded for University of Guelph Innovation Award, together with four University colleagues.

PROGRAMME

Per Waaben Hansen: Introduction to the design of an infrared milk analyzer.

Hélène Soyeurt: Why IDF-ICAR ExtraMIR Joint Project Plays a Crucial Role in Advancing the Global Adoption of FT-MIR-Based Methane Proxy ?

Amelie Vanlierde: Enteric CH4 emissions predicted from milk MIR spectra: robustness as the key to a model that crosses borders.

Maria Frizzarin: Validation of national and international equations for methane predictions using methane data collected in 2023 in Ireland.

Filippo Miglior: Genomic evaluation of MIR predicted methane and next steps.

DEVELOPERS

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