

ICAR Working Group on Feed & Gas – Overview of WG Scope and Survey

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R.F. Veerkamp¹, F. Miglior^{2,3}, A. Wilson³, A. Butty³, C. Richardson³, J.E. Pryce⁴, B. Gredler⁵, P.C. Garnsworthy⁶, R. Finocchiaro⁷, J. Lassen⁸, R. Benoit⁹, G Renand¹⁰, G Thaller¹¹, Y. de Haas¹

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¹Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, P.O. Box 338, 6700 AH Wageningen, the Netherlands

² Canadian Dairy Network, 660 Speedvale Avenue West, Suite 102, Guelph, Ontario, Canada N1K 1E5

³CGIL, Dept. of Animal Biosciences, University of Guelph, Guelph, Ontario, Canada N1G 2W1

⁴ Department of Economic Development, Jobs, Transport and Resources and La Trobe University, 5 Ring Road, Bundoora, 3083, Australia

⁵Qualitas AG, Chamerstrasse 56, 6300 Zug, Switzerland

⁶ University of Nottingham, School of Biosciences, Sutton Bonington, Loughborough LE12 5RD, UK

⁷ Italian Holstein Association (ANAFI), Via Bergamo 292, 26100 Cremona, Italy

⁸ Centre for Quantitative Genetics and Genomics, Aarhus University, Denmark

⁹ Institut de l'Élevage Monvoisin - BP 85225, 35652 Le Rheu Cedex, France

¹⁰ UMR 1313 Génétique Animale et Biologie Intégrative, INRA, 78352 Jouy-en-Josas, France

¹¹ Institute for Animal Breeding and Husbandry, Christian-Albrechts-University of Kiel, 24098 Kiel, Germany

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Abstract

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In 2015 the working group “Feed & Gas” of the International Committee of Animal Recording (ICAR) was established, with the aim to provide guidelines on recording feed intake and greenhouse gas output for cattle, sheep and goats. Furthermore, the working group aims to provide a forum to collaborate, exchange information, and facilitate and coordinate international collaboration for research on dry matter intake (DMI) and methane outputs data. Guidelines have been developed for recording feed intake, and methods for recording greenhouse gas output have been reviewed. Under the umbrella of the global Dry Matter Initiative (gDMI), together with other (inter-)national projects, a shared research agenda has been developed for genetics of DMI. This includes expansion to breeds other than Holstein, better understanding of the genetics of feed intake in relation to other traits, proxies and efficiency, and developing a system and standards for data storage. These might provide the basis for future genetic evaluation services.

To underpin this work, a survey has been designed and distributed. The objective of the survey is to attain an extensive understanding of recording methods and selection goals for feed efficiency (FE) and methane emission (ME) traits in dairy cattle. The first part of the survey investigates data and recording methods for FE and ME, and the methodology used by researchers to gather and store efficiency data will be the main focus. The second part of the survey investigates the breeding objectives and selection goals for FE and ME. The aim is to gain a comprehensive understanding of current and/or future implementation strategies used for these novel traits. The survey identifies specific phenotypic goals projected to be obtained through genetic selection. Emphasis is placed on identifying the specific traits and phenotypic data, as well as to model effects utilized in genetic evaluations. In order to prepare for incorporation of efficiency traits into selection indices, the methods used for genetic evaluation and genomic prediction will be evaluated. Finally, as it is unknown which other traits may be affected by the inclusion of FE and ME into selection indices, further data gathering of possible index re-weighting schemes will be conducted.

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Keywords: Feed Efficiency, Methane Emission, Dry Matter Intake, Survey, Standardization, data collection, data base