

GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

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METHANE FEED ADDITIVES FLAGSHIP PROJECT

(funding received from **Global Dairy Platform**: 2 years postdoc contract: September 2022 – December 2024)

Context

- Feed additives are a valuable strategy to reduce methane emissions from ruminants
- Increasing interest in developing feed additives
- Despite the extensive research effort over the last decades, few additives are available in the market

Flagship Project Goal(s)

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- ✓ **Facilitate the development and use of feed additives to reduce enteric methane emissions**
- ✓ **Improve academic and industry capability to develop feed additives and contribute to efficacy assessment**

Anticipated Flagship Outcomes/Impacts

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Technical guidelines and protocols on good practice on how to develop and test feed additives, as well as for accounting for the effect of using this mitigation strategy

Global network of experts to share knowledge and create detailed guidance to enable the livestock sector to collaboratively harness the potential that feed additives offer

Flagship Project Partners

53 Members from 22 countries : **Asia** **Europe** North America **Latin America** **Oceania**

WG1

Wang M.
Carro M.D., Fievez V., Joch M. Terranova M.
Benchaar C.
Durmic Z., Carbone V., Muetzel S.
Belanche A., Yáñez-Ruiz D.R. Bannink A
Garcia F., Ungerfeld E.
Duin E., Hristov A.

WG2

Battelli M., Kenny D., Lind V., Meo Zilio D., Peiren N., Ramin M.,
Rapetti L., Schwarm A., Stergiadis S., Theodoridou K., van
Gastelen S., Waters S. Lund, P.
Cajarville C., Fernandez Turren G., Muñoz C.
Hristov A., Ramirez Agudelo F.
Jonker A., Meale S., Pacheco D.
Bannink A., Belanche A. Yáñez-Ruiz D.R.
Garcia F., Ungerfeld E.

WG3

Eugene M., Niu M.
Congio G., Ellis J.

Bannink A.
Hristov A.
Vibart R.
Bannink A., Belanche A. Yáñez-Ruiz D.R.
Garcia F

WG4

Belanche A., Godoy Santos F., Huws S.,
Jeyanathan J., Morgavi D.
Guan L., McAllister T., Pitta D.
Denman S., Muetzel S.
Dijkstra J., Yáñez-Ruiz D.R., Bannink A.
Garcia F., Ungerfeld E.

WG5

Newbold J.
Van der Saag M., Waite J.
Tricarico, J.
Yáñez-Ruiz D.R., Bannink A.
Garcia F
Sang-Suk Lee, Michelle A. Miguel

WG6

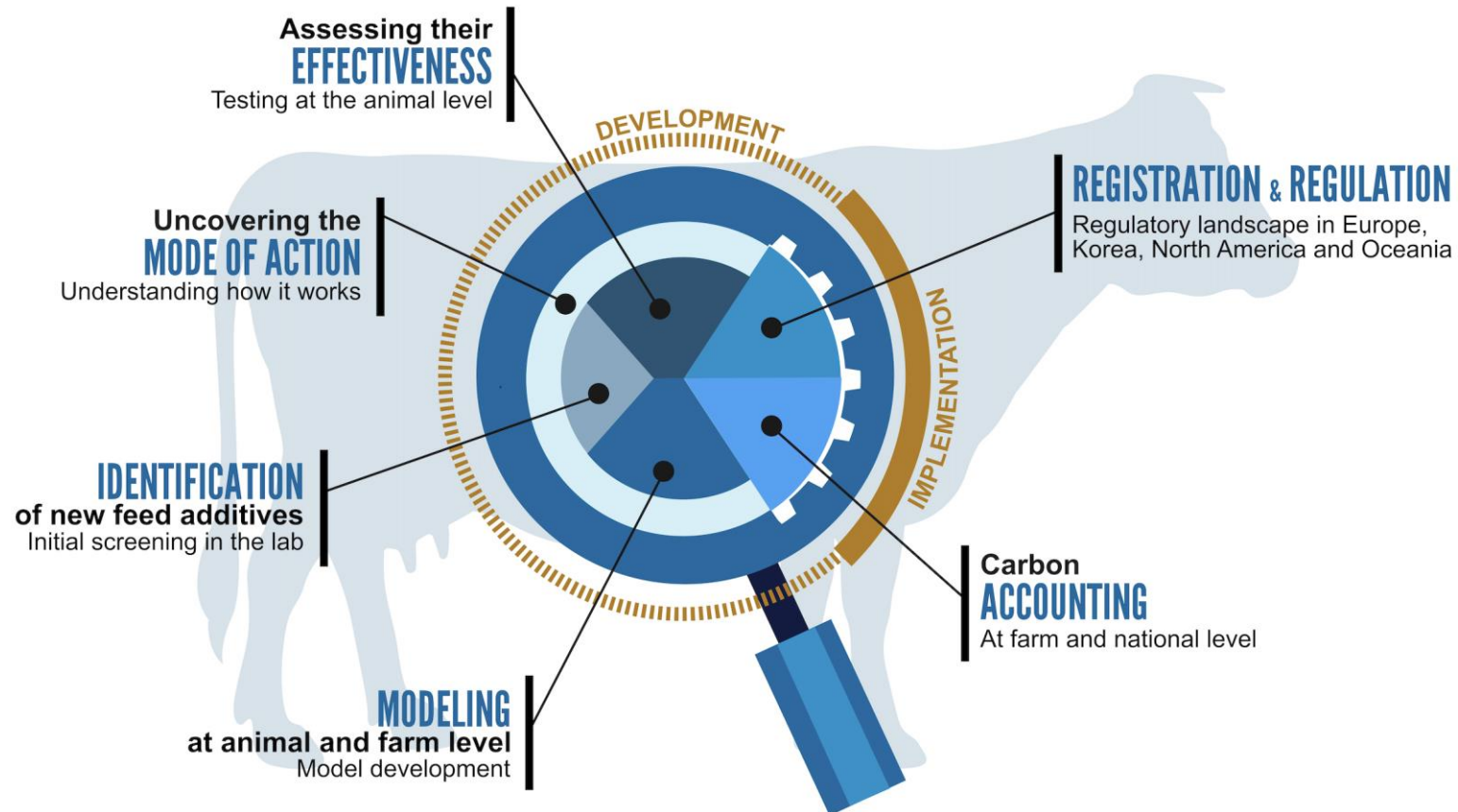
Faverin F., Henrique F., Leite F.,
Lopes da Silva A.
Bilotto F., Mazzetto A., Ridoutt B., Winslow E.
Del Prado A., Bannink A., Dijkstra J., Yáñez-Ruiz D.R.

Activities/Results To Date

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TECHNICAL GUIDELINES TO DEVELOP AND IMPLEMENT ANTI-METHANOGENIC FEED ADDITIVES



Activities/Results To Date

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Special issue in

Journal of
Dairy Science®

to be published in autumn 2024

Guidelines comprising 6 invited manuscripts	Status
1 - Recommendations for identification and selection of bioactive compounds to develop anti-methanogenic feed additives	Accepted
2. RECOMMENDATIONS FOR TESTING ENTERIC METHANE-MITIGATING FEED ADDITIVES IN ANIMAL STUDIES	Accepted
3. MODELING THE IMPACT OF FEED ADDITIVES ON ENTERIC METHANE EMISSION OF RUMINANTS: APPROACHES AND RECOMMENDATIONS	Accepted
4. A Guideline to Uncover the Mode of Action of Anti-Methanogenic Feed Additives for Ruminants	Accepted
5. Registration and regulation of feed additives	Accepted
6. Accounting at Farm, Regional, National or Global level	Accepted

Activities/Results To Date

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JDS25050

Special Issue: Regulatory frameworks and scientific evidence requirements for the authorization of feed additives to mitigate ruminant methane emissions

Juan M. Tricarico,^{1*} Florencia Garcia,² André Bannink,³ Sang-Suk Lee,⁴ Michelle A. Miguel,⁴ John R. Newbold,⁵ Peri K. Rosenstein,⁶ Matthew R. Van der Saag,⁷ and David R. Yáñez-Ruiz⁸

Special issue: Recommendations for testing enteric methane-mitigating feed additives in ruminant studies

Alexander N. Hristov,^{1*} André Bannink,² Marco Battelli,³ Alejandro Belanche,⁴ M. Cecilia Cajarville Sanz,⁵ Gonzalo Fernandez-Turren,^{5,6} Florencia Garcia,⁷ Arjan Jonker,⁸ David A. Kenny,⁹ Vibeke Lind,¹⁰ Sarah J. Meale,¹¹ David Meo Zilio,¹² Camila Muñoz,¹³ David Pacheco,⁸ Nico Peiren,¹⁴ Mohammad Ramin,¹⁵ Luca Rapetti,³ Angela Schwarm,¹⁶ Sokratis Stergiadis,¹⁷ Katerina Theodoridou,¹⁸ Emilio M. Ungerfeld,¹⁹ Sanne van Gastelen,² David R. Yáñez-Ruiz,²⁰ Sinead M. Waters,²¹ and Peter Lund^{22*}



J. Dairy Sci. TBC:1–21

<https://doi.org/10.3168/jds.2024-25046>

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JDS25046

Special Issue: A guideline to uncover the mode of action of antimethanogenic feed additives for ruminants

Alejandro Belanche,^{1*} André Bannink,² Jan Dijkstra,³ Zoey Durmic,⁴ Florencia Garcia,⁵ Fernanda G. Santos,⁶ Sharon Huws,⁶ Jeyamalar Jeyanathan,⁷ Peter Lund,⁸ Roderick I. Mackie,⁹ Tim A. McAllister,¹⁰ Diego P. Morgavi,¹¹ Stefan Muetzel,¹² Dipti W. Pitta,¹³ David R. Yáñez-Ruiz,¹⁴ and Emilio M. Ungerfeld^{15*}

Dissemination activities

- **Webinars**
 - Academic – FNN workshop November/December 2024
 - Industry / policy – Global Diary Platform
- **Dissemination material repository** (GRA website)
 - Short video
 - Links to manuscripts
 - Presentations
- **Workshops**
 - ADSA 2025
 - GGAA 2025
 - EAAP 2025
 - ...

Thank you!

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