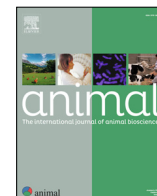




Contents lists available at ScienceDirect

Animal

journal homepage: www.elsevier.com/locate/animal

Editorial: Selected keynote lectures of the 76th Annual Meeting of the European Federation of Animal Science (Innsbruck, Austria)[☆]

Introduction

The European Federation of Animal Science (EAAP) is one of the leading platforms for advancing animal science and fostering collaboration among researchers, industry stakeholders, policymakers, and livestock professionals. Through its scientific networks, study commissions, and annual meetings, EAAP promotes knowledge exchange and encourages interdisciplinary approaches to addressing the challenges facing modern animal production. In a rapidly changing global context characterised by increasing demands for food security, environmental sustainability, animal welfare, and economic resilience, scientific innovation has become a central driver of progress in livestock systems.

The 76th EAAP Annual Meeting, held in Innsbruck, Austria, brought together scientists and professionals from across the world to discuss emerging developments and future directions in animal science. The meeting provided a forum for presenting new research, exchanging ideas, and identifying strategies to support sustainable livestock production under increasingly complex societal and environmental constraints. As in previous years, each EAAP Study Commission selected keynote contributions that addressed topics of broad scientific relevance and strategic importance for the future of animal agriculture.

Introduction to the review papers of this supplement

This supplement includes seven review papers that reflect the multidisciplinary nature of modern animal science, covering key areas such as nutrition, physiology, welfare, genetics, health, sustainability, and developmental biology. Although each review addresses a specific topic, they also share several common aspects such as the need to improve resource-use efficiency, enhance animal resilience and welfare, exploit new biological and technological knowledge, and develop production systems capable of balancing productivity with societal expectations. Collectively, these papers demonstrate how scientific advances can contribute to more sustainable and responsible livestock systems.

Nutrition and resource utilisation: improving animal productivity and sustainability

[Lunesu et al. \(2026\)](#) examine the role of dietary carbohydrates in the metabolic and hormonal regulation of nutrient partitioning

in dairy sheep and dairy goats with special focus on Sarda sheep and Saanen goats. Although both species are classified as small ruminants, they have important differences in nutrient utilisation, endocrine regulation, and milk production responses. The authors synthesise evidence indicating that Saanen goats maintain a metabolic profile that promotes nutrient allocation towards milk synthesis throughout lactation, whereas Sarda sheep use energy for body reserve storage during mid and late lactation. These differences have important nutritional implications, and therefore, dietary strategies should be adapted to the physiological characteristics of each species rather than assuming common nutritional responses across small ruminants.

In addition to this physiological perspective, [Pinotti et al. \(2026\)](#) further discuss food production sustainability and circular economy by addressing the growing interest in converting food loss and waste into livestock feed. As reducing nutrient leakage from food systems is increasingly recognised as a critical component of sustainable agriculture, livestock can play an important role within circular food-production systems. It evaluates different pathways for valorising food loss and waste, including direct feeding, insect-mediated biotransformation, and microbial conversion into single-cell proteins. While the nutritional potential of these resources is considerable, the review also highlights the importance of addressing safety concerns, regulatory limitations, logistical challenges, and economic feasibility.

Animal welfare, health, and resilience: considering life quality and long-term robustness of animals

[Dwyer et al. \(2026\)](#) critically examine the indicators currently used to assess animal welfare and explore their strengths and limitations, noting that welfare ultimately reflects the experiences and emotional states of animals, yet these internal states cannot be measured directly. Consequently, welfare assessment relies on a range of animal-based indicators and behavioural proxies that allow inferences about the animal's experience. Thus, this review paper highlights the need to develop methods to assess positive welfare and overall quality of life. This contribution provides an important conceptual framework for future welfare research and for the development of more meaningful welfare assessment systems.

The importance of long-term animal robustness is further explored by [Cesarani et al. \(2026\)](#), reviewing the current knowledge on dairy cow longevity. Longevity represents a key component of sustainable dairy production because it influences economic performance, replacement costs, animal welfare, and

[☆] This article is part of a special issue entitled: 'EAAP25' published in *Animal*.

<https://doi.org/10.1016/j.animal.2026.101912>

1751-7311/© 2026 The Author(s). Published by Elsevier B.V. on behalf of The animal Consortium. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

environmental efficiency. Despite decades of research and significant advances in genetic evaluation, substantial improvements in productive lifespan remain challenging. This review paper discusses the complexity of defining and measuring longevity, the relatively low heritability of longevity-related traits, and the role of management decisions in determining actual herd survival. By integrating biological, genetic, and management perspectives, this review paper describes that extending productive life remains one of the most promising avenues for improving both sustainability and animal welfare in dairy cattle systems.

While longevity reflects outcomes at the individual-animal level, Cleveland (2026) focuses on the perspective of considering the role of genetic improvement across entire livestock value chains. The review discusses how genetic decisions made at the farm level can contribute significantly to achieving sustainability goals, particularly when supported by appropriate incentives and market structures. This review proposes a framework in which value-chain stakeholders create incentives that promote farmers to consider breeding and mating strategies aligned with broader environmental objectives.

Animal health and welfare challenges are also addressed by Kremer-Rücker and Weber (2026), who review the emerging issue of tail lesions in dairy cows. Although tail inflammation and necrosis have been described for decades in beef cattle, increasing evidence suggests that similar lesions may be more widespread in dairy systems than previously recognised. The review synthesises knowledge regarding potential causes, including nutritional factors, housing conditions, management practices, and trauma. Understanding and preventing the causes of these conditions may contribute not only to improved welfare outcomes but also to better management practices and enhanced public confidence in livestock production.

Colostrum as a key factor for future adult performance

The final review shifts attention to early-life development and the biological foundations of future performance. Feyera et al. (2026) summarise the current knowledge on colostrum production and intake in piglets. Colostrum is widely recognised as a critical determinant of neonatal survival, providing energy, passive immunity, and bioactive compounds that support organ development and physiological maturation. The review highlights the challenges created by modern genetic selection for larger litter sizes, which has increased competition among piglets for limited colostrum availability. Beyond its immediate effects on survival, colostrum intake is shown to influence long-term growth, health, and even future reproductive performance. This review paper discusses nutritional, management, and genetic approaches to improve colostrum availability and utilisation, while also identifying opportunities for future research integrating omics technologies and predictive modeling.

As mentioned above, global livestock production is facing several challenges. Consequently, scientific innovation and international collaboration are crucial for addressing these challenges. The review papers in this supplement provide valuable insights into aspects currently facing animal scientists and livestock stakeholders. As demonstrated throughout the 76th EAAP Annual Meeting, addressing these challenges will require continued integration of disciplines, collaboration across sectors, and a commitment to translating scientific knowledge into practical solutions. It is expected that the contributions collected in this supplement will promote further discussion, inspire new research, and support the development of productive, resilient, sustainable, and socially responsible production systems.

On behalf of the editorial team and the EAAP, we acknowledge the authors for their contributions and the reviewers involved during the peer-review process for their helpful and valuable evaluations.

Ethics approval

Not applicable.

Data and model availability statement

Not applicable.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) did not use any AI and AI-assisted technologies.

Author ORCIDs

Lorenzo E. Hernández-Castellano: <https://orcid.org/0000-0003-2729-0434>.

Noemí Castro: <https://orcid.org/0000-0002-3026-2031>.

Jørgen S. Agerholm: <https://orcid.org/0000-0003-1653-4552>.

Marco Tretola: <https://orcid.org/0000-0003-3317-4384>.

Aridany Suárez-Trujillo: <https://orcid.org/0000-0002-9343-5016>.

CRediT authorship contribution statement

L.E. Hernández-Castellano: Writing – original draft. **N. Castro:** Writing – review & editing. **J.S. Agerholm:** Writing – review & editing. **M. Tretola:** Writing – review & editing. **A. Suárez-Trujillo:** Writing – review & editing.

Declaration of interest

The authors have not stated any conflicts of interest.

Acknowledgements

Not applicable.

Financial support statement

The Editorial was written without support from any funding agency, commercial or not-for-profit section.

References

- Cesarani, A., Milia, P.E., Bermann, M., Paolo Macciotta, N.P., Lourenco, D., 2026. Review: genomic blueprint of cow longevity. *Animal* (This Issue).
- Cleveland, M.A., 2026. Review: farm level incentive-driven genetic decisions are key to addressing value chain demand for beef and dairy product sustainability attributes. *Animal* (This Issue).
- Dwyer, C.M., Jørgensen, G.H.M., Gautier, J.M., 2026. Review: how do we measure welfare on farm? Indicators, proxies and gold standards. *Animal* (This Issue).
- Feyera, T., Johannsen, J.C., Langendijk, P., Vodolazska, D., 2026. Review: colostrum production and intake- functional roles in piglet survival, future reproduction, and the challenge of genetic selection. *Animal* (This Issue).
- Kremer-Rücker, P.V., Weber, K.M., 2026. Review: tail lesions in dairy cows – a summary of what's new about the old. *Animal* (This Issue).
- Lunesu, M.F., Decandia, M., Nudda, A., Atzori, A.S., Cannas, A., 2026. Review: role of dietary carbohydrates in the metabolic and hormonal control of nutrient partitioning in lactating dairy sheep and dairy goats. *Animal* (This Issue).

L.E. Hernández-Castellano, N. Castro, J.S. Agerholm et al.

Animal xxx (xxxx) xxx

Pinotti, L., Premarajana, P., Lin, P., Pacifico, E., Tretola, M., Cattaneo, D.M.I.R., Manoni, M., 2026. Review: nutritional, production, and safety aspects of converting food loss and waste into feed for livestock. *Animal* (This Issue).

L.E. Hernández-Castellano ^{a,*}

N. Castro ^a

J.S. Agerholm ^b

M. Tretola ^c

A. Suárez-Trujillo ^d

^a IUSA-ONEHEALTH 4. Animal Production and Biotechnology, Institute of Animal Health and Food Safety, Universidad de Las Palmas de Gran Canaria, 35413 Arucas, Spain

^b Department of Veterinary Clinical Sciences, University of Copenhagen, Taastrup 2630, Denmark

^c Swine Research Unit, Agroscope, 1730 Posieux, Switzerland

^d Department of Animal Science, Berry College, Mount Berry, GA 30149, United States of America

* Corresponding author.

E-mail address: lorenzo.hernandez@ulpgc.es (L.E. Hernández-Castellano)

Received 7 July 2026

Accepted 20 July 2026

Available online xxxx