



Special Issue on “Toward Sustainable Sheep Production Systems: Integrating Genetics, Welfare, Health, Reproduction, Management and Product Quality”

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Brief background:

Over the past two decades, sheep research has gained renewed global relevance, driven by the need for more efficient, resilient, and sustainable production systems in the face of climate change and the growing demand for animal-derived foods. In this context, both quantitative genetics and genomics have played complementary and increasingly integrated roles, enabling a deeper understanding of complex traits such as feed efficiency, disease resistance, environmental adaptation, and greenhouse gas emissions (including nutritional, physiological, and management-related components, beyond genetic control). Advances in genetic evaluation, supported by genomic information, have accelerated selection responses and improved the accuracy of breeding programs across



diverse production systems, from intensive operations to extensive pastoral systems, with a more holistic integration of phenotype, genotype, and environment.

At the same time, research on wool and meat production has evolved toward a more comprehensive perspective focused on quality and value addition. In wool, studies have deepened the understanding of key attributes such as fiber diameter, staple strength, and uniformity, linking them to both genetic background and nutritional and environmental management. In meat production, research has prioritized sensory quality, fatty acid composition, and feed conversion efficiency, in response to increasingly discerning consumers. Moreover, animal welfare and health have become central themes, with emphasis on stress mitigation, reduced reliance on antimicrobials, positive welfare, and the development of preventive strategies, including vaccination and genetic selection for parasite resistance.

Finally, reproduction and production systems have been key areas for improving overall efficiency in the sheep sector. Advances in reproductive biotechnologies, estrous cycle control, and management of prolificacy have enabled greater precision in production planning, while increasing attention has been paid to lamb survival as a critical determinant of system productivity, focusing on maternal traits, neonatal vigor, and perinatal management. In parallel, systems-level research has incorporated the strategic use of pastures as a central component of sustainable sheep production, emphasizing grazing management, forage diversity, and pasture–animal interactions to enhance efficiency and ecosystem services. This systemic perspective integrates productive, economic, and environmental dimensions—including carbon footprint and resource-use efficiency—and is essential for designing sheep production models capable of adapting to changing conditions while contributing to food security and ecosystem conservation.

We invite researchers and practitioners to contribute original articles to this Special Issue: **Toward Sustainable Sheep Production Systems: Integrating Genetics, Welfare, Health, Reproduction, Management and Product Quality.**"



Topics of interest for this special issue include:

- Genetics
- Reproduction
- Wool & Meat
- Health
- Welfare & Behaviour
- Production Systems

Submissions for this special issue are due on October 31, 2026, at 16:00 (Uruguay time)

Manuscript submission information

Full manuscripts should be submitted by the deadline through our platform <https://agrocienciauruguay.uy>, indicating in the note to the editor that they are intended for the Special Issue. Submitted manuscripts should not have been published previously nor be under consideration for publication elsewhere. All manuscripts will undergo a double-blind peer-review process. Authors must use the [journal template](#) to submit their manuscript. Submitted papers must be written in **English only**, as the special issue will be published exclusively in English. Accepted papers will be published altogether during the **first semester of 2027**.

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