Special Issue

The Development of Genomics Applied to Cattle Breeding

Message from the Guest Editor

The integration of genomics into livestock breeding has revolutionized cattle genetics, enabling unprecedented precision in trait selection and herd improvement. From early marker-assisted selection to cutting-edge genome-wide association studies and CRISPR-based editing, genomic tools have reshaped our understanding of complex traits like disease resistance, feed efficiency, and climate adaptability. This Special Issue aims to synthesize the historical evolution of genomic technologies in cattle breeding, explore their translational impacts on industry practices, and highlight emerging frontiers. We seek contributions that bridge gaps between discovery and application, including innovative methods in genomic prediction, the functional validation of candidate genes, and multiomics integration for phenotype enhancement. Topics may span population genomics, gene-edited livestock models, and bioinformatics pipelines for breeding optimization. We particularly encourage interdisciplinary studies combining genetics, bioinformatics, and agricultural economics to address global challenges such as food security and sustainable livestock production.

Guest Editor

Dr. Chugang Mei

College of Animal Science and Technology, Northwest A&F University, Yangling 712100, China

Deadline for manuscript submissions

30 November 2025



Agriculture

an Open Access Journal by MDPI

Impact Factor 3.6 CiteScore 6.3



mdpi.com/si/238746

Agriculture
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
agriculture@mdpi.com

mdpi.com/journal/agriculture





Agriculture

an Open Access Journal by MDPI

Impact Factor 3.6 CiteScore 6.3



About the Journal

Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, scholarly and scientific open access journal publishing peer-reviewed research papers, review articles, communications and short notes that reflect the breadth and interdisciplinarity of agriculture.

Editor-in-Chief

Prof. Dr. Les Copeland

Sydney Institute of Agriculture, School of Life and Environmental Sciences, The University of Sydney, Sydney, NSW 2006, Australia

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubAg, AGRIS, RePEc, and other databases.

Journal Rank:

JCR - Q1 (Agronomy) / CiteScore - Q1 (Plant Science)

