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 multi-omics 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

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Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, cross-disciplinary and scholarly journal on the science and technology of crop and animal production, and management of the natural resource base for agricultural production. We invite submissions from authors according to the aims and scope of the journal described in more detail on this page. *Agriculture* is published in an open access format – articles are published on the journal's website immediately after acceptance, giving the scientific community and the public unlimited and free access to the content.

Editor-in-Chief

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