



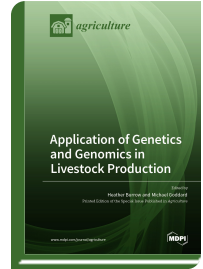
Special Issue Reprint

Application of Genetics and Genomics in Livestock Production

www.mdpi.com/books/reprint/7547

Edited by
Heather Burrow
Michael Goddard

ISBN 978-3-0365-7144-7 (Hardback)
ISBN 978-3-0365-7145-4 (PDF)



The delivery of genome sequences for most livestock species over the past 10–15 years has generated the potential to revolutionise livestock production globally, by providing farmers with the ability to match individual animals to rapidly changing climates, production systems and markets. Initially, technologies such as marker-assisted selection, functional genomics, gene expression, transcriptomics, proteomics and metabolomics were hailed as technologies with the greatest promise of delivering on that potential. To date, however, their potential for the delivery of practical solutions for livestock farmers is still to be realised, though they do provide supportive evidence of value to other approaches. Gene editing using tools such as CRISPR-Cas9 also show strong promise, but face regulatory hurdles before practical applications can be delivered for use by farmers. The technology that has had the greatest impact to date is genomic selection. This year marks 20 years since genomic selection was developed by Meuwissen, Hayes and Goddard (*Genetics*, 2001, 157: 1819-1829) and genomic selection has been successfully applied in livestock, plants and even human health applications. However, genomic selection also faces ongoing limitations around lack of essential phenotypes, particularly for expensive or difficult-to-measure traits and possibly the need for faster/greater computational capacity. It is therefore timely to examine the impact of genomic technologies generally, and to identify successes and limitations that need to be overcome in order to achieve practical applications for livestock producers in future.



Order Your Print Copy
You can order print copies at
www.mdpi.com/books/reprint/7547

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.