



ELSEVIER



FOR IMMEDIATE RELEASE

Contact: Brittany Morstatter

ARPAS@assochq.org

Discovering the effects of a myostatin gene variant in beef heifers

Metabolic implications of the F94L single nucleotide polymorphism are revealed in a new article in *Applied Animal Science*

Champaign, IL, December 21, 2020—The beef industry has made many advances through the study of genetics and genetic variants, such as single nucleotide polymorphisms. Through knowledge of the effects of certain genes and their variants, producers are able to genetically select cattle with ideal traits. In a recent [article](#) in *Applied Animal Science*, researchers from the USDA investigated a variant of the myostatin gene (*MSTN*) and its many effects in beef cattle.

This variant of *MSTN* was chosen for study because it affects growth and muscle characteristics. In this single nucleotide polymorphism (F94L), there is a leucine substitution at the F94 position of *Bos taurus* autosome 2. Normally, phenylalanine is found at the F94 position. The researchers genotyped the heifers that were studied and grouped them according to whether or not they had the F94L variant.

Measurements showed reduced oxygen consumption and heat production in the heifers with the variant, although oxygen consumption and heat production per kilogram of metabolic body weight decreased with age in all animals studied. The scientists also found that respiratory quotient tended to be greater and average daily gain was greater in heifers with the variant.

“With decreased oxygen consumption and decreased heat production combined with increased average daily gain, it is likely that these heifers had decreased maintenance energy requirements,” said lead author Kristin E. Hales, PhD, USDA, Agricultural Research Service, US Meat Animal Research Center, Clay Center, NE, USA. She added, “This could also indicate that heifers with the variant approached maturity more rapidly than heifers without the gene variant.” “This genetic variant possibly should be considered when assessing energy requirements of beef cattle,” said David K. Beede, PhD, editor in chief of *Applied Animal Science*.

The article appears in the December issue of *Applied Animal Science*.

#

Notes for Editors

“Effects of the F94L Limousin associated myostatin gene marker on metabolic index in growing beef heifers” by K. E. Hales, R. G. Tait Jr., A. K. Lindholm-Perry, R. A. Cushman, H. C. Freetly, T. M. Brown-

Brandl, and G. L. Bennett (DOI: <https://doi.org/10.15232/aas.2020-02046>), *Applied Animal Science*, Volume 36, Issue 6 (December 2020), published by FASS Inc. and Elsevier Inc.

Full text of the article is available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or arpas@assoqhq.org to obtain copies. To schedule an interview with the authors, please contact Dr. Kristin E. Hales at Kristin.Hales@ttu.edu.

About *Applied Animal Science*

Applied Animal Science (AAS) is a peer-reviewed scientific journal and the official publication of the American Registry of Professional Animal Scientists (ARPAS). In continuous publication since 1985, AAS is a leading outlet for animal science research. The journal welcomes novel manuscripts on applied technology, reviews on the use or application of research-based information on animal agriculture, commentaries on contemporary issues, short communications, and technical notes. Topics that will be considered for publication include (but are not limited to) feed science, farm animal management and production, dairy science, meat science, animal nutrition, reproduction, animal physiology and behavior, disease control and prevention, microbiology, agricultural economics, and environmental issues related to agriculture. Themed special issues also will be considered for publication. www.appliedanimalscience.org

About the American Registry of Professional Animal Scientists (ARPAS)

The American Registry of Professional Animal Scientists (ARPAS) is the organization that provides certification of animal scientists through examination, continuing education, and commitment to a code of ethics. Continual improvement of individual members is catalyzed through publications (including the AAS journal) and by providing information on educational opportunities. ARPAS is affiliated with five professional societies: American Dairy Science Association, American Meat Science Association, American Society of Animal Science, Equine Science Society, and Poultry Science Association. www.arpas.org

About Elsevier

[Elsevier](http://www.elsevier.com) is a global information analytics business that helps scientists and clinicians to find new answers, reshape human knowledge, and tackle the most urgent human crises. For 140 years, we have partnered with the research world to curate and verify scientific knowledge. Today, we're committed to bringing that rigor to a new generation of platforms. Elsevier provides digital solutions and tools in the areas of strategic research management, R&D performance, clinical decision support, and professional education; including [ScienceDirect](http://www.sciencedirect.com), [Scopus](http://www.scopus.com), [SciVal](http://www.scival.com), [ClinicalKey](http://www.clinicalkey.com), and [Sherpath](http://www.sherpath.com). Elsevier publishes over 2,500 digitized journals, including [The Lancet](http://www.thelancet.com) and [Cell](http://www.cell.com), 39,000 e-book titles and many iconic reference works, including [Gray's Anatomy](http://www.graysonline.com). Elsevier is part of [RELX](http://www.relx.com), a global provider of information-based analytics and decision tools for professional and business customers. www.elsevier.com

About FASS Inc.

Since 1998, FASS has provided shared management services to not-for-profit scientific organizations. With combined membership rosters of more than 10,000 professionals in animal agriculture and other sciences, FASS offers clients services in accounting, membership management, convention and meeting planning, information technology, and scientific publication support. The FASS publications department provides journal management, peer-review support, copyediting, and composition for this journal; the staff includes five BELS-certified (www.bels.org) technical editors and experienced composition staff. www.fass.org