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Water consumption, drinking behavior, and the effects of water quality in beef cattle

Water nutrition needs of beef cattle are reviewed and best practice guidelines recommended in a new article in *Applied Animal Science*

Champaign, IL, August 2, 2021—From the perspective of maintaining life, water is arguably the most essential nutrient. Without adequate access to clean water, cattle, like humans, can only survive for a few days. A new [review](#) in [Applied Animal Science](#) examines the water needs and intake patterns of beef cattle, compares these with current cattle nutrition guidelines, and recommends best practices to efficiently meet cattle needs for water—important considerations for animal welfare and performance.

Addressing the water needs of cattle is a multifaceted process. Not only the amount of water available but also water quality, as well as factors including weather patterns, time of day, feed intake levels, and animals' developmental stages and body weights, all influence cattle needs and behavior regarding water. Lead author John J. Wagner, PhD, professor of Animal Science at Colorado State University, Fort Collins, Colorado, USA, observed that “Few studies have been completed evaluating the influence of factors other than season or weather on drinking behavior by feedlot cattle.” However, Wagner points out, “It is important to consider drinking behavior and maximum daily water needs and not the average water needed for an extended period when developing water budgets and planning water systems.”

Providing cattle with free access to clean, fresh drinking water is crucial for animal health and production efficiency. Insufficient amounts of water, as well as contaminants in water, have serious negative consequences for animal health, with damaging financial effects for producers. The issue is particularly urgent at the present moment. “As society debates the important issues of climate change and the utilization of natural resources including land and water, it is important to understand the requirements of water as a nutrient in cattle production,” Wagner stated.



Caption: Many factors affect water intake and drinking behavior in cattle (Credit: J. J. Wagner).

“This invited review characterizes and examines biological, environmental, and management aspects, and water quality factors that influence water intake and drinking behavior of cow-calf, stocker, and feedlot cattle,” said David K. Beede, PhD, editor in chief of *Applied Animal Science*. Beede added, “Water nutrition and quality are paramount for optimal performance and welfare of beef cattle worldwide. To manage and to avoid health problems from compounds sometimes found in drinking water, current guidelines should be followed, using best management practices as delineated in this review.”

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

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Notes for Editors

“Invited Review: Water consumption, and drinking behavior of beef cattle, and effects of water quality,” by J. J. Wagner and T. E. Engle (DOI: <https://doi.org/10.15232/aas.2021-02136>), *Applied Animal Science*, Volume 37, Issue 4 (August 2021), published by Fass Inc. and Elsevier Inc.

This article is available at <https://doi.org/10.15232/aas.2021-02136>.

Full text of the article is available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or arpas@assoqh.org to obtain copies. To schedule an interview with the author, please contact J. J. Wagner at john.wagner@colostate.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

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