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Heat stress mitigation strategies used by beef cattle producers in the midwestern US

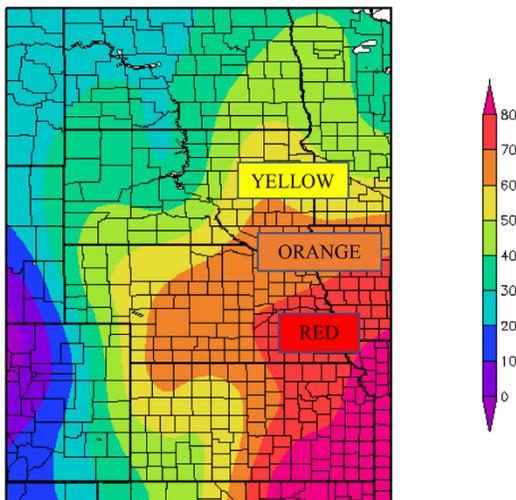
A survey of cattle feeders about their perceptions of approaches to alleviating heat stress is presented in a recent article in *Applied Animal Science*

Champaign, IL, October 4, 2021—Heat stress in an increasing problem for beef cattle feeders in the midwestern region of the United States. Humidity and high temperatures pose threats to cattle welfare and performance. Outreach efforts can suggest mitigation strategies, but these strategies are more likely to be adopted if the perceptions of producers are considered. A recent [article](#) in *Applied Animal Science* presented the results of an in-person survey of cattle feeders in South Dakota, Minnesota, and Nebraska.

“The researchers surveyed feedlot managers to capture their knowledge about facilities and management strategies to reduce heat stress and the perceived degree of effectiveness of mitigation strategies,” said David K. Beede, PhD, editor in chief of *Applied Animal Science*. The researchers also visited feedlots to observe the facilities and note the use of windbreaks, shade structures, and sprinkler systems. They asked survey participants many open-ended questions regarding the facilities used, their opinions about heat-stress mitigation strategies, and what strategies they hope to adopt in the future.

A wide variety of techniques to mitigate heat stress were discussed in the article, along with what percentage of feedlots in each state are using each technique. The facilities of the surveyed participants included open yards, total barn confinement, and partially covered pens, and strategies specific to each facility were addressed. The article elaborated on general strategies of heat-stress mitigation, such as shifting metabolic heat load by feeding cattle in the afternoon or evening, increasing fat in the diet, and avoiding handling cattle during periods of heat stress, among others. The researchers also asked participants what triggers the initiation of mitigation practices, what practices they viewed as successful or less successful in combating heat stress, and what challenges they anticipate in implementing new mitigation strategies.

Summer – Days with Heat Index \geq 80F



High Plains Regional Climate Center

Caption: Map of South Dakota, Minnesota, and Nebraska categorized by the number of days during the summer where the heat index exceeded 80: Yellow, 50 to 60 days; Orange, 60 to 70 days; Red, >70 days. The heat index was calculated according to an equation in a 1990 publication by L. P. Rothfus (https://www.weather.gov/media/ffc/ta_htindx.PDF) (Credit: High Plains Regional Climate Center. 2020. Summer—Days with heat index greater than 80F. Accessed Mar. 1, 2021. <https://hprcc.unl.edu/maps.php?map=HeatIndex>).

“Mitigation measures that reduce solar load such as confinement barns or shade structures appear to be viewed most positively in this region,” said lead author Warren C. Rusche, PhD, Department of Animal Science, South Dakota State University, Brookings, SD, USA. He added, “Increased use of site-specific heat-stress alert tools and a greater number of weather monitoring stations would allow for increased opportunity to mitigate heat stress before critical stress thresholds are reached.” The article covers the perceptions of producers on a wide variety of heat-stress mitigation practices, which would be helpful to consider to increase the success of outreach efforts aimed at reducing heat stress in beef cattle feedlots.

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

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Notes for Editors

“Heat stress mitigation strategies used by midwestern cattle feeders” by W. C. Rusche, E. J. Blom, A. DiConstanzo, G. E. Erickson, W. W. Gentry, Z. K. Smith, A. J. VanDerWal, T. M. Winders, and J. P. Cassady (DOI: <https://doi.org/10.15232/aas.2021-02187>), *Applied Animal Science*, Volume 37, Issue 5 (October 2021), published by Fass Inc. and Elsevier Inc.

This article is openly available at <https://doi.org/10.15232/aas.2021-02187>.

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 author, please contact Warren C. Rusche at Warren.Rusche@sdstate.edu.

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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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