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How is the dairy calf affected by late-gestation heat stress in utero?

Health and productivity of heifers born to cows dried off in different seasons are compared in a new article in *Applied Animal Science*

Champaign, IL, December 28, 2020—In the southern United States, dairy farmers are keenly aware of the effects of season as well as heat stress on the health and productivity of their herds. Heat stress during late gestation, or the dry period, among dairy cows can increase disease incidence after calving and decrease milk production. Heat and the season can also negatively affect the unborn calf. In a recent [article](#) in *Applied Animal Science*, researchers from the University of Florida compared calves born to cows dried off in the hot season with those born to cows dried off in the cool season to see if there were differences in survival rates and subsequent production.

“This large study in a commercial Florida dairy examines the effects of heat stress of pregnant cows in the dry period on subsequent health and lactational performance of their daughters,” said David K. Beede, PhD, editor in chief of *Applied Animal Science*. The scientists gathered data for heifers that were born to cows that were dried off from either May to July (the hot season) or November to January (the cool season). Environmental temperature and relative humidity during late gestation were considered, along with survival rate, age at first calving, and milk production of the heifers that were born either in the cool or hot season.

Heifers born in the cool season that did not experience heat stress in utero benefited. The researchers found that these heifers had greater survival rates and started their own first lactations a month earlier compared with heifers born to cows that experienced heat stress (hot season) during late gestation. Those born in the cool season also tended to produce more milk and protein in their first lactation.

“These data support a management strategy of late-gestation cooling to improve performance of offspring exposed to heat stress in utero and support the concept that heat stress abatement during the dry period improves the transition into lactation, not only in mature cows but also for their offspring exposed to cooling in utero,” said Geoffrey E. Dahl, PhD, Department of Animal Sciences, University of Florida, FL, USA. He added, “the rearing costs for the winter-born heifers would be lower because they entered production sooner than the summer-born heifers, which is associated with improved profitability.”

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

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Notes for Editors

“Late-gestation seasonal effects on survival and milk production of first-lactation Holstein dairy cows” by I. M. Toledo, A. P. Monteiro, and G. E. Dahl (DOI: <https://doi.org/10.15232/aas.2020-02029>), *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@assoqh.org to obtain copies. To schedule an interview with the authors, please contact Dr. Geoffrey E. Dahl at gdahl@ufl.edu.

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