



# OHIO VETERINARY NEWSLETTER

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Veterinary Extension

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## Research

Monteiro, A. P. A., Tao, S., Thompson, I. M., & Dahl, G. E. (2014). **Effect of heat stress during late gestation on immune function and growth performance of calves: Isolation of altered colostrum and calf factors.** *Journal of Dairy Science*. Advance online publication. doi: 10.3168/jds.2013-7891

**BACKGROUND:** Heat stress during the dry period affects general cow performance and has adverse effects on the offspring. It is unclear if decreased immune parameters are due to the calf or the colostrums, and the effect of maternal heat stress during late gestation on the health and postnatal growth of the calves is not currently well understood.

**PURPOSE:** The first experiment was designed to evaluate the effect of maternal heat stress during the dry period on calf-specific factors related to immune response and growth performance. The objective of the second study was evaluating the isolated effect of colostrum from cows under heat stress during the dry period on calf immune response and postnatal growth.

**RESULTS:** Cows were exposed to similar thermal environments during the dry period, and those without active cooling exhibited heat stress with greater rectal temperatures in morning and afternoon as well as greater respiration rates. Heat stressed cows had shorter gestation lengths and dry periods with less milk production postpartum.

**CONCLUSIONS:** The authors concluded that maternal heat stress during late gestation decreased calf birth weight and weaning weight and compromised the passive IgG transfer, regardless of colostrum source. Feeding colostrum from heat stressed cows during the dry period did not affect apparent efficiency of absorption or growth performance during the preweaning period, but seemed to impair humoral immune response during the first month of life.

[ACCESS THE ARTICLE...](#)

Wright, E. C., Boehmer, B. H., Cooper-Prado, M. J., Bailey, C. L., & Wettemann, R. P. (2014). **Effect of elevated ambient temperature at parturition on duration of gestation, ruminal temperature, and endocrine function of fall calving beef cows.** *Journal of Animal*

- [ODHMCP](#)
- [Farm Science Review](#)
- [Organic Livestock and Poultry Health](#)

### Archives

- [View here](#)

## Location

[Department of Veterinary Preventive Medicine](#)

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<http://vet.osu.edu/extension>

*Science*. Advance online publication. doi: 10.2527/jas.2014-8055

**BACKGROUND:** Elevated ambient temperature and heat stress are production concerns.

**PURPOSE:** Objectives of the experiments were to evaluate the influence of exposure of cows to elevated ambient temperatures on duration of gestation, ruminal temperature, and maternal plasma concentrations of progesterone, cortisol and estradiol.

**RESULTS:** Cows that calved in August tended to have shorter gestations compared with cows that calved in October. Concentrations of cortisol in plasma during the last 4 days of gestation were also greater in cows that calved in August. Duration of gestation was shorter for mid-August cows compared with October cows, but did not differ compared with late-August and September cows. Ruminal temperature during the 4 days before calving was not influenced by month of calving.

**CONCLUSIONS:** The authors concluded that exposure of beef cows to elevated ambient temperature during late gestation shortens gestation. Reproductive endocrine function at premature parturition induced by exposure of dams to elevated ambient temperature is normal. They hypothesize that increased body temperature of the cow during heat stress results in increased temperature of the fetus and early initiation of the signal to the hypothalamo-pituitary-adrenal axis that results in fetal secretion of cortisol and initiation of parturition.

[ACCESS THE ARTICLE...](#)

lida, R., & Koketsu, Y. (2014). **Interactions between pre- or post-service climatic factors, parity, and weaning-to-first-mating interval for total number of pigs born of female pigs serviced during hot and humid or cold seasons.** *Journal of Animal Science*. Advance online publication. doi: 10.2527/jas.2014-7636

**BACKGROUND:** No associations between total pigs born and pre- or post-service temperatures and humidity have been separately quantified in commercial herds in either humid subtropical climate zones or humid continental climate zones. Additionally, information about the effect of cold season climatic factors on reproduction is also limited.

**PURPOSE:** The objective of this study was to examine interactions between the associations of pre- or post-service climatic factors and production factors for TPB in female pigs serviced during either hot and humid or cold seasons.

**RESULTS:** High climatic temperature around the time of service events is a critical factor for decreased female total pigs born in commercial herds in either humid subtropical climate zones or humid continental climate zones.

**CONCLUSIONS:** The authors concluded that this study implies that heat stress around the time of services decrease total pigs born, and we recommend that producers apply cooling management for females in summer starting from the pre-service period in order to increase total pigs born.

[ACCESS THE ARTICLE...](#)

Fonsêca, V. F., Saraiva, E. P., Pimenta Filho, E. C., Furtado, D. A., Mariz, T. M., Silva, A. L., ... Pinheiro, A.C. (2014). **Influence of the climatic environment and duration of labor on the mother-offspring interaction in Morada Nova sheep.** *Journal of Animal Science*. Advance online publication. doi: 10.2527/jas.2013-7322

**BACKGROUND:** In extensive management systems, the mortality of lambs has been attributed to various factors, including adverse climatic conditions, dystocic labors, low birth weight, hypothermia, delayed lactogenesis, insufficient colostrum production and competition with siblings in multiple births

**PURPOSE:** The objective of this study was to evaluate the influence of the duration of

labor and of black globe temperature-humidity index at the time of the birth on the formation of the mother-offspring bond in Morada Nova sheep.

**RESULTS:** Lambs were slower to express early and took more time to stand and to suckle when they were born under black globe temperature-humidity index conditions below 65. Conversely, at higher temperatures (BGTHI > 80), the newborns were more reactive because the animals were able to maintain heat due to the smaller thermal gradient with the environment. In addition, the greater environmental challenges made it more difficult for the newborns to locate the udder. According to the results, the time spent by the lamb seeking the udder can have a positive relationship with the latency to first suckling.

**CONCLUSIONS:** Newborn Morada Nova lambs are slower to stand and suck when born under black globe temperature-humidity index conditions below 65. Therefore, lambs born in periods with lower temperatures require greater care from the breeder, especially during the first 24 hours after birth. Prolonged labors harm the mother-offspring bond, especially in terms of the lambs' behavioral progress and the dam's ability to clean her lamb's body.

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## Calendar



A full calendar of all upcoming events and continuing education opportunities offered by the College of Veterinary Medicine is available on the website at <http://vet.osu.edu/>

### [Ohio Dairy Health and Management Certificate Program](#)

Module 3 – Basic Dairy Cattle Nutrition  
December 4-6, 2014

Module 4 – Advanced Dairy Cattle Nutrition  
March, 2015 (TBD)

Modules 3 and 4 of this cohort will be focused on nutrition. Space is still available under the specific-module option.

### [Farm Science Review](#)

September 16-18, 2014

Please visit the College of Veterinary Medicine Tent located in OSU Central next to the Leeper Antique Building or the [Question the Authorities](#) program for one of the topics pertaining to veterinary medicine.

Visitors to the 2014 Farm Science Review can participate in "Buckeye Fever," a game designed to expand awareness about how diseases spread. There will be a daily prize drawing for participants who register at the College of Veterinary Medicine tent.

### [Organic Livestock and Poultry Health Series](#)

Webinar - Organic Livestock Inputs  
Wednesday, October 1, 2014 at 1:00 pm



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AND ENVIRONMENTAL SCIENCES**