



OHIO VETERINARY NEWSLETTER

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In This Issue

Research

- [A randomized trial to evaluate the effect of a trace mineral premix on the incidence of active digital dermatitis lesions in cattle](#)
- [Relationship among eye and muzzle temperatures measured using digital infrared thermal imaging and vaginal and rectal temperatures in hair sheep and cattle](#)
- [Short communication: effect of pomegranate-residue supplement on *Cryptosporidium parvum* oocyst shedding in neonatal calves](#)

Calendar

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

[Click here to view archives](#)

Research

Gomez, A., Bernardoni, N., Rieman, J., Dusickm, A., Hartshorn, R., Read, D. H., ... Döpfer, D. (2014). **A randomized trial to evaluate the effect of a trace mineral premix on the incidence of active digital dermatitis lesions in cattle.** *Journal of Dairy Science*, 97(10), 6211-6222. doi: 10.3168/jds.2013-7879

BACKGROUND: Strategies to prevent and control bovine digital dermatitis have had variable success. Also, the traditional approach for prevention has overlooked animals that receive less attention regarding lameness (such as beef or dairy replacement heifers).

PURPOSE: The objective was to evaluate the efficacy of a trace mineral premix containing higher than typically recommended levels of organic trace minerals and iodine (HOTMI) in reducing the incidence of naturally and experimentally induced bovine digital dermatitis lesions in a randomized controlled trial in Holstein steers.

RESULTS: The primary outcome measured was the development of an active digital dermatitis lesion greater than 20 mm in diameter across its largest dimension. For the natural exposure phase of the study, 120 healthy Holstein steers 5 to 7 months of age without signs of hoof disease were randomized into a control or treatment group. No lesions were observed in either group. The challenge phase included 15 steers from each group that were experimentally challenged within a digital dermatitis infection model. During the challenge phase, 55% (11/20) and 30% (6/20) of feet were diagnosed with an active digital dermatitis lesion in the control and treatment groups, respectively.

CONCLUSIONS: Although more research is needed to confirm the results observed in the present study, the trend of decreased digital dermatitis incidence and decreased lesion size is suggestive that the HOTMI premix could be a novel strategy for controlling digital dermatitis in the field.

[ACCESS THE ARTICLE...](#)

George, W. D., Godfrey, R. W., Ketring, R. C., Vinson, M. C., & Willard, S. T. (2014). **Relationship among eye and muzzle temperatures measured using digital infrared thermal imaging and vaginal and rectal temperatures in hair sheep and cattle.** *Journal of Animal Science*.

Location

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Advance online publication. doi: 10.2527/jas.2014-8087

BACKGROUND: Digital Infrared Thermal Imaging (DITI) using a thermal camera has the potential to be used as a non-invasive and rapid method of monitoring animal body temperature. Using non-invasive methods decreases the need to handle or restrain animals, and can have applications in non-domestic species where handling is impractical or impossible.

PURPOSE: The objective of these experiments was to compare the temperature of the eye (EYE) or muzzle (MUZ) measured using DITI to vaginal (VT) and rectal temperature (RT) as measures of core body temperature in hair sheep and beef cattle.

RESULTS: Exp 1: EYE, VT, and RT were measured in lactating, multiparous hair sheep ewes. There was a high correlation between VT and RT ($r = 0.95$), EYE and RT ($r = 0.76$) and EYE and VT ($r = 0.77$). Exp 2: EYE, MUZ, VT, and RT were measured in multiparous, lactating ewes after receiving either lipopolysaccharides (LPS) or saline. When data were combined across treatments (LPS and saline) there was a high correlation between VT and RT ($r = 0.96$), EYE and RT ($r = 0.82$), MUZ and RT ($r = 0.72$), and EYE and VT ($r = 0.93$). Exp 3: EYE, MUZ, VT, and RT were measured in multiparous, non-lactating Senepol Cattle. There was a high correlation between VT and RT ($r = 0.78$), a moderate correlation between VT and EYE ($r = 0.52$), RT and EYE ($r = 0.58$), and EYE and MUZ ($r = 0.48$); however, there was no correlation between RT or VT and MUZ.

CONCLUSIONS: The authors concluded that these results show that measuring the temperature of the eye in sheep and cattle, or the muzzle in sheep, using thermography can be a non-invasive method to monitor body temperature. Further research needs to be conducted in more animal species and under a wider variety of environmental conditions. The current price of the technology may limit its wide spread use but as the technology is enhanced and prices drop it may find wider acceptance and use in animal health and well-being evaluations.

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Weyl-Feinstein, S., Markovics, A., Eitam, H., Orlov, A., Yishay, M., Agmon, R., ... Shabtay, A. (2014). **Short communication: effect of pomegranate-residue supplement on *Cryptosporidium parvum* oocyst shedding in neonatal calves.** *Journal of Dairy Science*, 97(9), 5800-5805. doi: 10.3168/jds.2013-7136

BACKGROUND: Within herd prevalence of *Cryptosporidium parvum* ranges from 53 to 100%. Effective therapy for cryptosporidiosis is limited, so the main mode of action remains preventive hygiene management. A recent study demonstrated antidiarrheal and anticryptosporidial effects of the pomegranate peel on infected mice.

PURPOSE: This study was aimed at investigating the effect of dietary supplementation of concentrated pomegranate extract in milk on *Cryptosporidium* oocyst shedding in Holstein calves reared in commercial farms.

RESULTS: Forty-one calves were randomly assigned to a control or treatment group. Exp 1: the treatment group was supplemented with 3.75% concentrated pomegranate extract and had reduced fecal oocyst count and diarrhea intensity and duration. No differences observed in average daily gain. Exp 2: the treatment group was supplemented with 0.6% concentrated pomegranate extract and no effects on oocyst count and average daily gain were observed. However, there was a shorter duration of diarrhea and higher weight gain among males at 14 days of age.

CONCLUSIONS: The authors concluded that their results support the dietary utilization of concentrated pomegranate extract to alleviate overall intestinal morbidity. The use of concentrated pomegranate extract may have significant importance for herds suffering from high incidence of cryptosporidiosis and consequently help to minimize negative economic outcomes. Such a solution may be beneficial to organic farming. Although the current study showed the desired positive effects, further studies are needed to establish

the optimal concentration of concentrated pomegranate extract.

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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.

Organic Livestock and Poultry Health Series

Webinar – Basics of Poultry Health and Management
Thursday, October 30, 2014 at 1:00 p.m.

Webinar – Internal Parasite Management in Pasture-Based Sheep and Goat Operations
Monday, November 3, 2014 at 1:00 p.m.

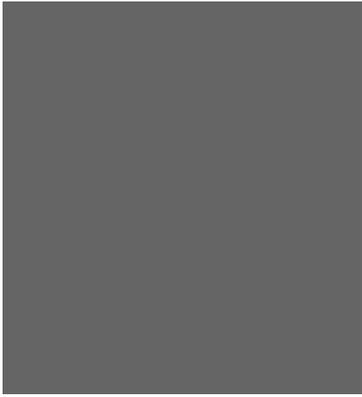
The *Ohio Veterinary Newsletter* began in October of 1974 as a way for Veterinary Extension to relay relevant information to practicing veterinarians in Ohio. The aim is to communicate pertinent news from the Veterinary Extension Unit; unbiased, research-based information with practical relevance for veterinary practitioners working in food animal, equine, and shelter medicine; and a calendar of upcoming opportunities. Please feel free to provide your feedback and let us know what information is most helpful to you and your practice.

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