Workman, Jeffrey D.

Subject: Ohio Veterinary Newsletter Vol 41 No 13

OHIO STATE UNIVERSITY EXTENSION

OHIO VETERINARY NEWSLETTER

June 12, 2015 | **Veterinary Extension** | **Vol 41, No 13**

In This Issue

Location

News

HPAI Update

A common question regarding the current situation with Highly Pathogenic Avian Influenza involves the use of vaccination. The USDA reports that additional criteria must be met before emergency use of vaccine for highly pathogenic avian influenza can be approved. Key points regarding the potential use of vaccination include the following:

- Vaccines currently available are not well matched and do not meet a suitable level of efficacy.
- If a suitable vaccine was developed, the vaccine industry must be in a position to produce enough doses to create an effective control measure.
- Outreach with trading partners will be required to avoid significant market disruptions. Some significant trading partners have indicated that, if vaccinating begins, they would ban all U.S. exports of poultry and eggs until they could complete a risk assessment.
- In general, the development of an effective vaccine for influenza is always challenging because of the diversity of strains and the ability for any strain to change or mutate.

The USDA encourages development of vaccines for HPAI and will approve them as they are developed and evaluated. No human infections with these viruses have been detected, and the U.S. Centers for Disease Control and Prevention considers the risk to the general public to be minimal. Properly prepared and cooked poultry and eggs are safe to eat.

ACCESS THE ARTICLE…

Research

Titler, M., Maquivar, M. G., Bas, S., Rajala-Schultz, P. J., Gordon, E., McCullough, K., Federico, P., & Schuenemann, G. M. (2015). **Prediction of parturition in Holstein dairy cattle using electronic data loggers**. *Journal of Dairy Science*. Advance online publication. doi: 10.3168/jds.2014-9223

Department of Veterinary Preventive Medicine

Chair: Dr. William Saville
A184 Sisson Hall
1920 Coffey Road
Columbus, Ohio 43210
saville.4@osu.edu
614-292-1206

Subscribe

Contact:
Jeffrey D. Workman, PhD
Extension Program Coord.
workman.45@osu.edu
614-292-9453

http://vet.osu.edu/extension

BACKGROUND: Monitoring of prepartum cows for imminent signs of birth requires frequent observation by personnel. Development of monitoring systems that can predict calving time before the appearance of imminent signs of birth (amniotic sac or feet of the calf) would enable dairy producers and their personnel to implement a precision calving management program to help reduce undesirable calving-related events such as stillbirth due to late or no interventions.

PURPOSE: The objective was to assess the effect of parturition on behavioral activity [steps, standing time, lying time, lying bouts, and duration of lying bouts] 4 days before and 1 day after calving using electronic data loggers (IceQube, IceRobotics, Edinburgh, UK).

RESULTS: Heifers and cows with unassisted births had significantly higher number of steps and longer standing time, decreased lying time, and more lying bouts of shorter duration 24 hours before calving compared with day −4, −3, and −2. Additionally, the number of lying bouts increased as both heifers and cows approached labor starting on day −2 and peaked at the day of calving. The time since the activity index increased over 50% to parturition did not differ between heifers and cows, and the activity index revealed the shift in activity on average 6 hours 14 minutes (range from 2 h to 14 h 15 min) before calf birth.

CONCLUSIONS: The authors concluded that dairy cattle approaching parturition showed a distinct behavioral pattern that can predict calf birth on average 6 hours before calving. Electronic data loggers as predictors of parturition in real-time and around-the-clock may facilitate the implementation of a precision calving management program to help reduce the prevalence of calving-related losses such as stillbirth due to late or no interventions. The appropriate time to place the data loggers relative to expected calving date and the activity index will likely need to be refined taking into account the management and logistics of each individual farm relative to when pregnant animals near parturition (grouping and regrouping), and perhaps include other physiological parameters (e.g., rumination) to determine its predictive value for calving (including specificity and sensitivity).

ACCESS THE ARTICLE…

Masters, N., Christie, M., Stratton, H., & Katouli, M. (2015). **Viability and stability of *Escherichia coli* and enterococci populations in fecal samples upon freezing**. *Canadian Journal of Microbiology*. Advance online publication. doi: 10.1139/cjm-2015-0020

BACKGROUND: The immediate processing of fecal samples after collection and transport to the laboratory is not always technically or economically feasible; thus, samples must be appropriately stored. Previous research on storage has involved only human samples or focused on a single species; or they've evaluated samples from a single host, not large composite samples or diverse host species.

PURPOSE: The aim was to evaluate the viability and diversity of *E. coli* and enterococci populations in fecal samples of human and of animal origin after storage at either –20 or –80 °C for 30 days.

RESULTS: A significant reduction in the number of *E. coli* was observed in all samples stored at –20 °C but in only 3 of those samples stored at –80 °C. However, the numbers of enterococci were similar in most stored samples (except cow and birds). The number and the distribution of *E. coli* and enterococci BPTs in fresh samples did not vary significantly from those stored at either temperature. Furthermore, the population structure of *E. coli* and enterococci did not change significantly after storage at –80 °C, this was always the case for those samples stored at –20 °C.

CONCLUSIONS: The authors propose that for evaluating the population structure of *E. coli* and enterococci in fecal samples, storing samples at –80 °C for up to 30 days would not change the overall population structure of these bacteria. This will allow researchers or veterinarians to collect as many samples as required and test them simultaneously to minimize the effect of interassay variation. However, when the aim is to only count the

number of these strains, tests should be done on fresh fecal samples, as the number of these bacteria in stored feces, of some species, may vary upon storing.

ACCESS THE ARTICLE…

Villeneuve, A., Polley, L., Jenkins, E., Schurer, J., Gilleard, J., Kutz, S., … Gagné F. (2015). **Parasite prevalence in fecal samples from shelter dogs and cats across the Canadian provinces**. *Parasites & Vectors, 8*(281). doi: 10.1186/s13071-015-0870-x

BACKGROUND: For zoonotic enteric parasites of dogs and cats, meaningful assessment of their possible impacts on companion animal and human health, as well as the design of optimal protocols for parasite control, depend significantly on robust prevalence data in animals and in people. In Canada, of particular concern are *Toxocara* species, *Baylisascaris procyonis*, *Echinococcus granulosus* (*E. canadensis*) and *E. multilocularis*, *Cryptosporidium* and *Giardia* species, and *Toxoplasma gondii*.

PURPOSE: The purpose was to determine the prevalence of intestinal parasites in shelter dogs and cats in all Canadian provinces in order to help veterinarians and physicians to better educate their clients and patients about parasite prevalence and help guide parasite diagnostic and preventive programs.

RESULTS: 33.9% of dogs and 31.8% of cats were positive for at least one parasite. *Toxocara canis* and *T. cati* were the most prevalent parasite present in fecal samples followed by *Cystoisospora* spp. Prevalence in dogs was similar across the Atlantic, East, West and Pacific regions, while prevalence in cats varied regionally. Eggs of *E. granulosus*/*E. canadensis* were detected in samples from dogs from BC, AB, and ON.

CONCLUSIONS: This study reinforces the importance of strategies for prevention, which depend in part on shelter management and owner awareness of the sources and management options for parasites in their pets. This awareness can be greatly enhanced by veterinarians and their staff. Veterinarians are an important source of information for pet owners and play a critical role in the initiation of education programs emphasizing the importance of preventive measures in reducing the risks of environmental contamination and zoonotic transmission.

ACCESS THE ARTICLE…

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 6 – Economics of Dairy Business
Dec 3-4, 2015 (dates to be determined)
Columbus, Ohio
Space is available for specific module plan.

Organic Livestock and Poultry Health Series

CSI for Dairy: Assessing the Risk of Uterine Disease
June 1, 2015 (12-1 p.m.)
webinar

Nutrition and Mammary Health
June 3, 2015 (12-1 p.m.)
webinar

On-Farm Dairy Herd Health Workshop
June 29, 2015 (10 a.m. – 3 p.m.)
Maria Stein, Ohio

This series provides veterinary CE at no-cost.

Keith L. Smith, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension and Gist Chair in Extension Education and Leadership.

Access to full-text journal articles may require individual subscriptions.

THE OHIO STATE UNIVERSITY

COLLEGE OF VETERINARY MEDICINE

COLLEGE OF FOOD, AGRICULTURAL AND ENVIRONMENTAL SCIENCES