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Subject: Ohio Veterinary Newsletter Vol 41 No 12

OHIO STATE UNIVERSITY EXTENSION

OHIO VETERINARY NEWSLETTER

May 22, 2015 | **Veterinary Extension** | **Vol 41, No 12**

In This Issue

News

Avian Influenza & Biosecurity
Dr. Mohamed El-Gazzar

There has been recent detection of multiple avian influenza viruses in North America (Canada and United States). These viruses have apparently been introduced by migratory birds. These influenza viruses have been detected in captive birds, backyard poultry, and commercial poultry flocks in more than 20 different states and provinces in USA and Canada. This situation is **UNPRECEDENTED** in the history of the poultry disease outbreaks in North America. Confirmed cases closest to the state of Ohio include 3 cases in Ontario, Canada north of Lake Eire and 1 confirmed case just west of Fort Wayne, Indiana.

These viruses appear to be related to an influenza virus that has been circulating in Asia and Europe throughout 2014. This group of influenza viruses is highly pathogenic to domestic poultry, making them severely sick with high mortality of more than 90% in many cases. These viruses represent a low to negligible risk for human infections. However, as a precautionary measure, confirmed infected poultry and poultry products do not enter the food supply. Poultry and poultry products are safe to consume when they are properly handled and cooked.

While surveillance and quick diagnosis are essential tools to detect the virus and limit the spread of the disease and eventually control the outbreak, it's the **BIOSECURITY** efforts that will prevent the infection from reaching your flock, whether it is commercial or noncommercial. Biosecurity can be defined as "*the sound sanitary practices that are used to stop the infectious agent from reaching the host*". But, before understanding biosecurity practices and the logic behind them, one must understand the dynamics of disease transmission.

Infectious diseases in bird populations can be transmitted by two primary ways:

1. Direct transmission, which means the infectious agents are transmitted through direct physical contact between infected and uninfected susceptible individuals.
2. Indirect transmission, which means the infectious agents are transmitted through indirect transportation vehicles to reach the susceptible individuals. In the case of diseases that affect birds including avian influenza, the indirect transportation vehicles could include:
    - Humans

Location

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- Domestic animals including pets
- Wild animals including varmints, rodents, and insects
- Physical objects including equipment
- Feed
- Water
- Environment including shared pastures and water ponds

Accordingly, biosecurity practices are divided into:

1. Practices that aim to prevent direct transmission.
    - Avoid contact between your flock and other birds: wild, domestic, or otherwise.
    - Prevent your birds from mixing with other poultry or wild birds. Mixing of birds often happens around open water bodies and in open pasture.
    - Whenever possible prevent mixing between species within the same flock, and between multiple ages within the same species.
    - Try to acquire birds from National Poultry Improvement Plan (NPIP) disease free sources.
    - If you bring new birds into your flock, quarantine the new birds for 1 week before mixing with the rest of the flock.
    - If you show birds, attend fairs, or perform any activity where birds from different places come together in one place, quarantine the birds for 1 week before mixing back with the rest of the flock.
2. Practices that aim to prevent indirect transmission.
    - It is highly recommended **NOT** to bring any visitors to your bird flock. They could be carriers of diseases on their clothing, their shoes, on their hands, or any objects they bring with them.
    - It's recommended to have specific clothing and shoes dedicated to working with your birds.
    - Additionally, using disposable coveralls, gloves, and shoe covers are highly recommended. They are relatively inexpensive, easy to dispose of, and very efficient in controlling the infection.
    - Hands are the number one suspect when it comes to disease transmission. So, wash your hands before and after handling your birds, or their feed/water.
    - Wash your hands before and after handling any equipment, bedding material, housing material, or any object that comes in contact with the birds.
    - Hand sanitizing stations should be in place and used every time the poultry house is entered or exited.
    - Similarly, foot wear play a very prominent role in transmitting diseases. Footbaths with freshly changed disinfectants (changed daily) should be in place and used every time the poultry house is entered or exited.
    - In this link <http://www.cfsph.iastate.edu/Disinfection/Assets/Disinfection101.pdf> a very useful document by the Center for Food Security & Public Health at Iowa State University summarizing available disinfectants. Phenols (on page 13 of the document) are one of the few chemicals that can maintain its activity in hard water and organic matter. It's probably one of the most suitable choices to be used in footbaths.

- Don't bring your pets or allow them access to your birds.
- It is essential to house the birds in animal proof/bird proof houses.
- It is very important to have an effective rodent and insect control program. Rodents and insects are notorious for transmitting, not only human disease, but also poultry diseases.
- Equipment, bedding material, housing material, or any object that comes in contact with the birds should be thoroughly cleaned and properly disinfected before using with your birds.
- Acquire your feed from trusted sources and properly store the feed in dry, cool and clean place, shielded from access by other birds and animals, particularly rodents.
- Drinking water for birds should be the same quality as drinking water for humans. Surface water from rivers, ponds, or puddles is particularly dangerous as it often contains infectious disease agents from migratory wild birds.
- If possible, try to house your birds at a distance (1 mile) away from other poultry and wild bird gathering areas.

These practices should be adopted by anyone who owns, grows, or handles poultry.

The Link below is updated daily for all the latest detections in the USA.

http://go.osu.edu/USDA_avian-influenza-updates

In the link below is additional information about the history of this influenza outbreak. It also offers recommendations and additional resources regarding safe handling of wild birds.

http://www.nwhc.usgs.gov/publications/wildlife_health_bulletins/WHB_2014-05_H5N8.pdf

Finally, if you experience sudden disease signs or sudden mortality in your flock, please contact:

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Research

Payne, E., Boot, M., Starling, M., Henshall, C., McLean, A., Bennett, P., & McGreevy, P. (2015). **Evidence of horsemanship and dogmanship and their application in veterinary contexts**. *The Veterinary Journal*. Advance online publication. doi: 10.1016/j.tvjl.2015.04.004

BACKGROUND: Owners of domestic animals expect their veterinary practitioners to demonstrate adequate expertise in handling animals and this requires veterinarians to be students of animal behavior, even if unintentionally. This review article is the result of a thorough literature search, examining empirical evidence of best practice in human–dog and human–horse interactions in terms of optimal behavioral outcomes and animal welfare.

PURPOSE: To identify the core human attributes that seems to contribute to good horsemanship and dogmanship. This should provide a broad framework for best practice in the management of animal behavior and motivation, not only for veterinary teams but,

more generally for owners, handlers, and trainers of both horses and dogs.

RESULTS: Based on the literature, it appears that the most effective practitioners are distinguished by their ability to relate to animals, retain their attention, and remediate their behavior. Consistency in signaling and reinforcement is advocated to optimize human–animal harmony. Appreciate the animal's individual learning history such as reinforcement or punishment associated with particular discriminative stimuli. Additional attributes include absence of threat, attention directed toward animal, safety signals, and affiliation.

CONCLUSIONS: The attributes of affiliation, safety, and positive reinforcement seem to contribute greatly to the development and maintenance of moderate arousal and positive affect in animals. The authors concluded that dissemination of evidence-based horsemanship and dogmanship skills from veterinary teams to owners should improve human–animal relationships more generally. Ideally, this could clarify the phenomenon of trust in human–animal relationships. It is appropriate for veterinary professionals to take a leading role in this process.

ACCESS THE ARTICLE…

Chizzotti, M. L., Machado, F. S., Valente, E. E., Pereira, L. G., Campos, M. M., Tomich, T. R.,… Ribas, M. N. (2015). **Technical note: Validation of a system for monitoring individual feeding behavior and individual feed intake in dairy cattle**. *Journal of Dairy Science*. Advance online publication. doi: 10.3168/jds.2014-8925

BACKGROUND: The methods used for monitoring feed intake and behavior have traditionally been very labor intensive and required conditions/facilities that may not reflect the typical dairy farm where animals are housed in groups. The Intergado monitoring system (Intergado Ltd., Contagem, Minas Gerais, Brazil) determines individual feeding behavior and feed intake in cattle; however, no data have been published that validate this system for lactating dairy cattle.

PURPOSE: The objective was to validate the feeding behavior (bin-visit duration) and feed intake data collected from the Intergado system by comparison to time-lapse video recordings and manual feed intake measurements.

RESULTS: The Intergado system presented high values for specificity (99.9%) and sensitivity (99.6%) for cow detection. The visit duration and feed intake per visit collected using the electronic monitoring system were similar to the video and manual weighing data, respectively. The difference between the feed intake measured manually and the sum of the electronically recorded feed intake was less than 250 g (25,635 ± 2,428 and 25,391 ± 2,428 g estimated using manual weighing and the electronic system, respectively).

CONCLUSIONS: The authors concluded that the Intergado system provides a reasonable monitoring system for feeding behavior and feed intake by freestall-housed dairy cows.

ACCESS THE ARTICLE…

McCarthy, M. M., Yasui, T., Ryan, C. M., Mechor, G. D., & Overton, T. R. (2015). **Performance of early-lactation dairy cows as affected by dietary starch and monensin supplementation**. *Journal of Dairy Science*. Advance online publication. doi: 10.3168/jds.2014-8820

BACKGROUND: In the period immediately following calving, DMI is insufficient to support the high milk production of early lactation, resulting in a state of negative energy balance (EB). The authors hypothesized that increasing starch content during the immediate postpartum period and feeding monensin throughout the periparturient period and into early lactation would enhance milk production and improve energy metabolism without detrimental effects on dry matter intake (DMI), and that the effects of monensin on

performance would be independent of postpartum dietary starch content.

PURPOSE: The objectives were to evaluate the effects of dietary starch content during the immediate postpartum period on intake and production, and to evaluate the effects of peripartal monensin supplementation in conjunction with these diets of differing starch content on DMI, production, feed efficiency, and EB.

RESULTS: Cows fed more propiogenic diets in early lactation via increased starch content or monensin inclusion had increased milk yield and DMI during the immediate postpartum period. Cows fed high-starch diets had lower fat, true protein, and lactose percentages; and cows fed monensin had lower fat and lactose percentages in early lactation, although no differences were observed among treatments in overall milk component yields. Cows fed high-starch diets or monensin had less negative EB during the immediate postpartum period.

CONCLUSIONS: The authors concluded that feeding more propiogenic diets via higher starch content and monensin inclusion favorably affected postpartum production outcomes, increased feed intake, and improved energy balance during the postpartum period.

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 5 – Leadership and Personal Effectiveness
May 28-29, 2015
Hilton Garden Inn, 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.)

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

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

status. This statement is in accordance with United States Civil Rights Laws and the USDA.

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.

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