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An Introduction to Animal Welfare Audits and Assessments in the U.S.

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Consumers today are very different than they used to be - they are far removed from agriculture, yet have a strong interest in where their food comes from, including how the animals are raised and handled. To help build consumer trust in dairy production, a number of animal welfare assurance programs have developed over the last decade. As part of any program, an evaluator or auditor visits the farm regularly to ensure they are meeting the specific criteria of the program. Below you will find some terminology and examples of welfare assurance programs in the US to help you navigate the programs that may be coming your way soon!

- **1st party** = the person doing the farm assessment is an employee of the farm.
- **2nd party** = the person doing the farm visit has some relationship to the farm but does not work on the farm. The herd veterinarian, feed rep, co-op rep, or other individuals that regularly visit the farm would be considered 2nd party.
- **3rd party** = the person doing the farm visit has no relationship to the farm and is unbiased.
- **Audit/Certification** = Audit or certification programs are usually 3rd party, so that the auditor can be unbiased in their assessment of the farm. In most audits, there is a set of requirements or criteria that a farm needs to reach before they can be certified by the program. Auditors in the US are usually trained by [PAACO](#) (Professional Animal Auditor Certification Organization).
- **Assessment/Evaluation** = Assessment or evaluation programs are usually 2nd party, so the evaluator can be someone with a relationship to the farm. These programs are typically not as strict as audits in their requirements, but may have some criteria that all farms need to eventually meet.
- **Mandatory criteria** = Both audits and assessments include some criteria that a farm must reach to stay enrolled in the program. Examples of mandatory criteria include not tail-docking, evidence of a VCPR (vet-client-patient-relationship), written herd health protocols, and evidence of a zero-tolerance policy for animal abuse and neglect (such as rough handling, prolonged lack of access to feed and water, and inappropriate methods of [euthanasia](#)).

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- **Continuous improvement criteria** = Audit and assessment programs also have criteria that are not mandatory, but a farm needs to show evidence of continual improvement over subsequent farm visits. Examples of common areas for improvement include reducing the number of extremely thin and severely lame cows in the herd.

Examples of the most common animal care/welfare programs in the US include:

- 1) **[The National Dairy FARM \(Farmer's Assuring Responsible Management\) Program](#)** is a 2nd party evaluation based primarily on continuous improvement (with some mandatory criteria in the newest version). The program was created in 2009 by the National Milk Producers Federation ([NMPF](#)) and Dairy Management, Inc ([DMI](#)), and has currently enrolled 105 co-ops and processors, making up 98% of the US milk supply. Farms are enrolled by their coop or processor, and an evaluator visits the farm every 3 years. To ensure the validity of the program, a small percentage of enrolled farms are visited by a 3rd party auditor every year.
- 2) **Food industry audits or assessments from retailers/processors** can be either 2nd or 3rd party, depending on the program. Some retailers have specific requirements that they want their herds to reach, and may include aspects of animal welfare that their specific consumer base values, such as providing pasture access or restricting the use of genetically modified organisms (GMOs).
- 3) **Third-party audits** have been created by independent organizations, including Validus, Certified Humane, American Humane, and Animal Welfare Approved. Regardless of what co-op or processor they are connected with, producers can also opt to be a part of one of these audits. Depending on the commodity, these audits may also include a certification label on the product (labels are more common in egg and meat production).

Zika Virus and Animals

In addition to the public health concerns, the spread of Zika Virus raises questions about livestock and companion animals. The current information regarding Zika Virus and animals is available at <http://www.cdc.gov/zika/transmission/qa-animals.html>

To summarize: no evidence has been found regarding animal involvement in the spread of the virus and there have been no reports of sickness in animals. The CDC reports that animals in the US are not at risk of becoming sick with Zika Virus. Microcephaly has not been reported with Zika virus infection in animals living in areas where Zika virus is present; however, more research is needed to better understand Zika virus and microcephaly in animal pregnancy.

Below are two review articles providing an overview about what is currently known and what needs to be investigated.

The first article provides a review of what is known about the epidemiology, natural history, and public health impact of Zika Virus, the empirical basis for this knowledge, and the critical knowledge gaps that need to be filled.

- Lessler, J., Chaisson, L. H., Kucirka, L. M., Bi, Q., Grantz, K., Salje, H.,...Rodriguez-Barrquer, I. (2016). Assessing the global threat from Zika virus. *Science*. Advance online publication. doi: 10.1126/science.aaf8160

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The second article reviews the current literature regarding vectors, reservoirs, and amplification hosts (including potential of animal hosts).

- Vorou, R. (2016). Zika virus, vectors, reservoirs, amplifying hosts, and their potential to spread worldwide: what we know and what we should investigate

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To summarize the section regarding animal hosts:

- The virus reservoir was not identified in a 1947 study in Zika Forest, Uganda, where Zika Virus was first isolated from rhesus monkeys. The monkeys displayed mild or absent clinical presentations, while 5 days after experimental infection, they developed neutralizing antibodies.
- Anti-Zika Virus antibodies were detected in wild mammals in Senegal in 1967–1968.
- In 1969, in Zika Forest, Zika Virus was isolated from samples taken from monkeys.
- In Lombok, Indonesia, in 1978, anti-Zika Virus antibodies were detected in ducks, goats, cows, horses, bats, and carabaos (water buffalo), but not in chickens, rats, or wild birds, indicating the widespread circulation of the virus in domestic animals. The question of whether birds transfer the virus over long distances remains unanswered.
- In 1982 in Gabon, antibodies against the virus were again detected in monkeys.
- In 1983, antibodies against Zika Virus were detected in Pakistan among rodents, domestic sheep, and goats, as well as in human sera.
- Samples collected in 1996–1997 from wild and semi-captive orangutans in Borneo, Malaysia, tested positive for anti-Zika Virus antibodies.
- Samples collected from monkeys in West Africa from 1968 through 2002 were examined and the virus detected with RT-PCR.
- Samples collected between 1962 and 2008 from monkeys in West Africa tested positive for specific Zika Virus antigens with serology assays.
- The authors note that antibody detection assays run the risk of cross-reaction with other flaviviruses co-circulating with the Zika Virus, thus challenging the safe interpretation of published data. Furthermore, early laboratory methods for the detection of antibodies were of uncertain specificity and sensitivity, and antigen and molecular assays had not been developed.

Research

Huntley, S. J., Dean, R. S., Massey, A., & Brennan, M. L. (2016).

International evidence-based medicine survey of the veterinary profession: Information sources used by veterinarians. *PLOS ONE*, 11(7). doi: 10.1371/journal.pone.0159732

BACKGROUND: Evidence-based veterinary medicine (EVM) is defined as “the use of best relevant evidence in conjunction with clinical expertise to make the best possible decision about a veterinary patient. With the Internet and increased accessibility to electronic media worldwide, a wider array of resources for veterinary information are becoming more available to more people. Information resources accessed by the veterinary profession in the United Kingdom have previously been identified; however, there have been no previous peer-reviewed studies assessing how veterinarians in different countries source veterinary information.

PURPOSE: The aim was to describe the current breadth of veterinary resources used by veterinarians internationally, to determine which ones are perceived as useful and understand how they are accessed. Additionally, the aim was to determine the most

successful way to contact veterinarians globally. This knowledge can be used to help understand the best ways to deliver relevant information to the international veterinary community to enhance the use of evidence by veterinarians worldwide.

RESULTS: Clinicians and non-clinicians reportedly used journals most commonly (65.8%, n = 1207/1835; 75.6%, n = 216/286) followed by electronic resources (58.7%, n = 1077/1835; 55.9%, n = 160/286), respectively. Respondents listed a total of 518 journals and 567 electronic sources that they read. Differences in veterinarian preference for resources in developed, and developing countries, were found. The nominated journals most read were the *Journal of the American Veterinary Medical Association* (12.7% of nominations) for clinicians and the *Veterinary Record* (5.7%) for non-clinicians. The most accessed electronic resource reported was the Veterinary Information Network (25.6%) for clinicians and PubMed (7.4%) for non-clinicians.

CONCLUSIONS: The authors concluded that the results of this international survey have given insight into the information seeking behavior of veterinarians across the world. A wide array of journals and electronic resources are accessed by veterinarians worldwide and veterinary organizations appear to play an important role in global dissemination of information to veterinary practitioners. Clinicians in practice are likely to need information that is easily accessible and is in a summarized format for use in a timely manner, as it is possible they could adopt a more passive approach to acquiring information than non-clinicians. Further work should focus on whether access to information sources is a barrier and how the information acquired is integrated into practice by veterinarians, to further facilitate the application of EVM principles into practice.

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Guarín, J. F., & Ruegg, P. L. (2016). **Short communication: Pre- and postmilking anatomical characteristics of teats and their associations with risk of clinical mastitis in dairy cows.** *Journal of Dairy Science*. Advanced online publication. doi: 10.3168/jds.2015-10093

BACKGROUND: The dimensions of the teat and milking-induced changes in teat dimensions may be associated with risk of intramammary infections (IMI). According to previous research, milk from quarters with wider teat barrels (postmilking) had greater quarter level somatic cell count (SCC) compared with milk from quarters with thinner teat barrels.

PURPOSE: The primary objective was to describe and compare anatomical characteristics of teats before and after machine milking adjusted for parity and teat location (front vs. rear). The second objective was to determine if milking and anatomical characteristics of teats were associated with occurrence of clinical mastitis.

RESULTS: As compared with premilking dimensions, postmilking teats were longer and narrower at the barrel and the apex. Significant interactions between teat position and parity were identified for premilking teat length and diameter of the teat barrel. Premilking, teats were longer and wider with increasing parity. Front teats were longer and wider than rear teats premilking. Also during premilking, differences between the front and rear teat were less at increasing parity. Teat apex diameter was greater for premilking teats of cows in parity ≥ 3 and the apexes of front teats were wider than those of rear teats. Teats enrolled in the case-control study had twice as many clinical mastitis cases in front quarters compared with rear quarters. Premilking diameter of the teat apex was positively associated with risk of clinical mastitis (odds ratio = 1.20 per 1-mm increase in the diameter of the apex of the teat, 95% confidence interval = 1.05–1.37). Milking machine-related changes in teat dimensions had no association with occurrence of clinical mastitis.

CONCLUSIONS: The authors conclude that these results indicate the need for further research about teat dimensions and their influence on mastitis risk in a larger set of farms, larger group of cows, different type of liners, and additional risk factors such as type of bedding and hyperkeratosis scores. Milking machine effects on teats are not well defined and additional research is required to better understand this relationship. Premilking teat apex diameter is positively associated with incidence of clinical mastitis. In

contrast, milking machine-related changes in teat dimensions and occurrence of clinical mastitis were not associated in the current study.

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Toaff-Rosenstein, R. L., Gershwin, L. J., & Tucker, C. B. (2016). **Fever, feeding and grooming behavior around peak clinical signs in bovine respiratory disease.** *Journal of Animal Science*. Advanced online publication. doi: 10.2527/jas.2016-0346

BACKGROUND: Detection of clinical signs of bovine respiratory disease (BRD) by feedlot personnel is inaccurate compared to post-mortem findings and it is unclear why. Improved detection is important from animal welfare and economic standpoints.

PURPOSE: The objectives were to 1) assess fever, feeding, and grooming around peak clinical disease as diagnostic measures 2) describe the relationship between fever, feeding, and grooming and BRD severity. They hypothesized that BRD would result in fever, anorexia, and less grooming, and that sickness response expression would increase in proportion to disease severity.

RESULTS: BRD challenge steers had fever (1.1 °C higher; $P < 0.01$) and anorexia (35% lower feeding time, $P = 0.03$), but did not differ from healthy Controls for brush contact ($P = 0.37$) or self-licking ($P = 0.15$). Higher clinical score and more % lung grossly affected were associated with increased fever (d 0, $P \leq 0.04$), and lower feeding (d 0, $P < 0.01$), brush contact (d 0, $P \leq 0.03$) and self-licking ($P \leq 0.05$) duration relative to lower clinical score and less % lung grossly affected.

CONCLUSIONS: The authors concluded that both fever and feeding time appear to be good diagnostic measures at the peak of BRD clinical signs and the 2 days before, with consistent differences observed between BRD challenge and control. There was also a clear relationship between both fever and feeding to clinical signs and lung lesions. This provides clinical and pathological evidence that they are sensitive to changes in BRD severity. Brush contact is moderately correlated to lung lesions, but despite this relationship, grooming generally appears less promising as a diagnostic measure. Regardless of which component is monitored, cattle with milder disease may be more difficult to detect than sicker animals.

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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 8 – Organic Animal Health Workshop

- Aug 25-26, 2016
- Hilton Garden Inn; Columbus, Ohio

Spots are always available for specific module plan.

Poultry Medicine Workshops

Practitioners will develop knowledge & skills to receive poultry clients

- Oct 4, 2016; Cleveland, Ohio
- Oct 5, 2016; Columbus, Ohio
- Oct 6, 2016; Cincinnati, Ohio

Details and registration information will be forthcoming...

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