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Peer Review: How Do Your Health Protocols Measure Up?

In dairy herds, protocols and Standard Operating Procedures (SOPs) are essential management tools for guiding decisions and criteria used for the diagnosis and treatment of specific health conditions (e.g., metritis, mastitis) as well as to standardize management practices (e.g., milking routine, colostrum administration to calves, castration, dehorning). For instance, a written protocol provides information on “what to do” (e.g., treatment for a specific disease) and the SOPs within the protocol describes, systematically, “how to do it” (operational steps and resources needed to perform a given protocol).

Protocols are customized and farm-specific, and practicing veterinarians are often asked to develop and write protocols for individual farms, particularly health protocols. Furthermore, many retailers are requesting that their suppliers (e.g., dairy and beef farms), either via in-house or through third party audits, document health and management practices for the food animals under their care. With the scrutiny of antimicrobial use and welfare practices in food animals always under the watchful eye of consumers, retailers, legislators, and activists; it is crucial that we use the best herd-health management practices that comply with federal/state regulations while also considering the health and well-being of the animal. Therefore, the review of health protocols is a key component of the auditing process, and veterinarians are expected to develop best care practices and avoid drug residues entering the food chain.

OSU Veterinary Extension has developed a prototype “double-blind peer review system” that would provide a mechanism for dairy veterinarians to submit their protocols electronically for review. In science, a peer-review process serves as the “quality control” for published manuscripts. We have worked with other dairy veterinarians and their clients over the past couple of years, and they have expressed strong support for an approach to review protocols. This peer-review process would be entirely confidential and anonymous.

The process would work as follows:

1. A veterinarian will submit one or more protocols to OSU Veterinary Extension (animalhealthprotocols@gmail.com). There will be a small processing fee to cover cost of this service.
2. The editor within Veterinary Extension (e.g., Dr. Gustavo Schuenemann) will remove any identifiable information and send it to two or three separate confidential reviewers who are selected based on the specific expertise needed.

- [Ohio Dairy Veterinarians Meeting](#)

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Location

[Veterinary Extension Unit](#)

housed within the

[Department of Veterinary Preventive Medicine](#)

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Contact:

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

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

3. The reviewers would provide suggestions and comments to improve the protocol (e.g., content, regulatory compliance, latest technology, clarity).
4. The editor will then send the information (comments and suggestions) back to the original veterinarian without revealing the names of the reviewers. Pictures and logos are not provided.

Initially, the reviewers will likely consist of experts (e.g., academia, industry) from around the country. However, the goal will be to eventually include those who are regularly submitting protocols to serve as blind reviewers for others. The long-term goal of this initiative will be to provide new resources to enhance management and services of practicing veterinarians to improve food safety and security at the herd level; and thus, consumer trust.

<https://vet.osu.edu/extension/dairy-resources/peer-review-system-animal-health-protocols>

Research

Marti, S., Melendez, D., Pajor, E., Fernandez, D. M., Heuston, C., Gellatly, D.,... Schwartzkopf-Genswein, K. (2017). **Effect of band and knife castration on beef calves on welfare indicators of pain at three relevant industry ages: II Chronic pain.** *Journal of Animal Science*. Advance online publication. doi: 10.2527/jas2017.1763

BACKGROUND: The United States and Canada lack legislation related to optimal age, method, or use of pain control agents at the time of castration. There are few studies that evaluate the chronic or long-term effects of castration associated with method and age.

PURPOSE: The aim was to evaluate the effect of band and knife castration on chronic indicators of pain at 1 week, 2 month-, and 4-month-old calves.

RESULTS: No differences were observed in salivary cortisol, substance P, haptoglobin or hair cortisol among castration methods for any of the three ages. No changes in behavior were observed in calves castrated at 1 week or 2 months of age. In 4-month-old calves, BA (castrated with band) spent less time lying than CT (control group) and KN (castrated with knife) calves. Also, the average duration of lying time for BA calves was greater than CT calves. Both, 1-week and 2-month old calves had inflammation in the scrotal area lasting 7 days after KN castration while inflammation was observed for up to 14 days in 4-month-old calves. Swelling in BA calves lasted for 21 to 28 days in the two younger groups of calves, while in 4-month-old calves swelling was observed until day 35 post castration. Knife and band castrated calves did not exhibit indicators of chronic pain or distress when the procedures were performed in calves younger than 2 months of age.

CONCLUSIONS: Results indicate that physiological, behavioral and clinical pathological indicators of pain/stress are significantly influenced by both the method, and age the castrations were performed. The authors concluded that pain mitigation should be used when castrating in order to improve animal welfare, especially when castrations are performed in calves older than 2 months of age independent of the method of castration.

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Dahl, M. O., Maunsell, F. P., De Vries, A., Galvao, K. N., Risco, C. A., & Hernandez, J. A. (2017). **Evidence that mastitis can cause pregnancy loss in dairy cows: A systematic review of observational studies.** *Journal of Dairy Science*. Advance online publication. doi: 10.3168/jds.2017-12711

BACKGROUND: Although published observational studies have provided different levels of evidence indicating that mastitis can cause pregnancy loss in dairy cows, most of these studies used nonobjective research methods and failed to establish a temporal relationship between mastitis and pregnancy loss in dairy cows, making their study results inconclusive. A systematic review that has carefully examined the evidence of association between mastitis and pregnancy loss in dairy cows produced by observational studies has not been published.

PURPOSE: The objective was to conduct a systematic review to identify and assess the evidence and knowledge gaps in published observational studies that have investigated the relationship between mastitis and pregnancy loss in dairy cows.

RESULTS: The literature search identified 651 records for initial screening. The final screening process identified 8 qualified articles for review after removing 10 duplicate records, 582 titles, 31 abstracts, and 20 full-text articles. Two studies produced strong epidemiologic evidence indicating that (1) exposure to clinical mastitis during early gestation (first 45 days of gestation) is associated with subsequent pregnancy loss during the following 90 days; and (2) subclinical mastitis 1 to 30 days before artificial insemination (AI) is associated with subsequent pregnancy loss at 35 to 41 days of gestation. An additional study showed that exposure to clinical mastitis during early lactation in combination with low body condition can increase the risk of pregnancy loss in dairy cows; however, the interaction effect between clinical mastitis and low body condition on pregnancy loss was considered weak. Four other studies produced inconclusive evidence indicating that mastitis is a predisposing factor for pregnancy loss in dairy cows, as the exposure risk period for mastitis overlapped with the follow-up period for diagnosis of pregnancy loss in dairy cows. Finally, one study failed to identify a relationship between mastitis and pregnancy loss in dairy cows.

CONCLUSIONS: The authors concluded that the systematic review revealed that epidemiologic evidence that mastitis can cause pregnancy loss in dairy cows was limited to 2 studies that used objective research methods. Four additional studies reported an association between mastitis and pregnancy loss, but the study results were inconclusive because the exposure risk period for mastitis overlapped with the follow-up period for PL in study cows.

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Krawczel, P., Ferneborg, S., Wiking, L., Dalsgaard, T. K., Gregersen, S., Black, R.,... Ternman, E. (2017). **Milking time and risk of over-milking can be decreased with early teat cup removal based on udder quarter milk flow without loss in milk yield.** *Journal of Dairy Science*. Advance online publication. doi: 10.3168/jds.2016-12312

BACKGROUND: Increasing the milk flow rate at which milking is terminated can shorten milking time and increase milking efficiency. The effects on milk yield and composition have not been fully investigated when the take-off is set at the udder quarter level and independent of feeding during milking.

PURPOSE: The objective was to investigate the effect of 3 take-off levels at the udder quarter level applied in combination with or without teaser feed, on milking efficiency, milk composition, free fatty acids (FFA), and MFG.

RESULTS: Milking interval for the study was below 8 hours for all treatments and was not affected by take-off level or teaser feed. Milking time was shortest for 0.48 (6.7 ± 0.5 min) and increased with a lower take-off level: 7.2 ± 0.5 min for 0.3 and 7.6 ± 0.5 min for 0.06. Milking time was not affected by provision of teaser feed and no interaction was observed between feed and take-off level on milking time. Milk yield was greater in multiparous than primiparous cows (29.9 ± 1.5 and 24.6 ± 1.7 kg of milk per day respectively), but milk yield, peak milk flow, or average milk flow were not affected by take-off level or teaser feed. No carry-over effects were evident for data on milking interval, milk flow, milk yield, or any other variables tested. No significant differences were observed among takeoff levels, the inclusion of teaser feed, or the interaction between

them on milk composition. Residual milk, yields and percentage of available milk yield, were not affected by take-off level, feed availability, or their interaction.

CONCLUSIONS: The authors concluded that this study shows that it is possible to reduce milking time by applying a take-off level as high as 0.48 kg/min on the udder quarter level without losing milk yield or compromising milk composition or udder health. The teaser feed did not affect milk yield or composition and did not interact with the take-off levels.

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Pempek, J. A., Schuenemann, G. M., Holder, E., & Habing, G. G. (2017). **Dairy calf management-A comparison of practices and producer attitudes among conventional and organic herds.** *Journal of Dairy Science.* Advance online publication. doi: 10.3168/jds.2017-12565

BACKGROUND: Producer implementation of best management practices is vitally important to ensure calf health and welfare, and the implementation of these practices at the herd level is influenced by producer attitudes. Understanding dairy producers' current management practices and attitudes is important to identify barriers toward implementation of best management practices.

PURPOSE: The objectives were to assess the usage frequency of selected calf management practices for conventional and organic dairy operations, and investigate attitudinal differences between producers related to calf health and management.

RESULTS: The majority of conventional (64%, 279/439) producers reported separating the calf from the dam 30 minutes to 6 hours after birth. More organic (34%, 56/166) than conventional (18%, 80/439) producers reported separation 6 to 12 hours after birth, and organic producers were more likely to agree time before separation is beneficial. Few conventional (10%, 44/448) and organic (3%, 5/171) producers reported measuring colostrum quality. Most conventional producers (68%, 304/448) hand-fed the first feeding of colostrum, whereas the majority of organic producers (38%, 69/171) allowed calves to nurse colostrum. Lastly, 44% (188/430) of conventional producers reported vaccinating their calves for respiratory disease, compared with 14% (22/162) of organic producers; organic producers were more likely to perceive vaccines as ineffective and harmful to calf health.

CONCLUSIONS: The authors concluded that their results suggest significant and meaningful differences in attitudes and practices between conventional and organic dairy producers on key management practices related to calf health. This information can be used to develop producer-oriented programs to address specific attitudes to implement sound management practices to promote calf health and development.

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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/>

[Poultry Medicine Workshops](#)

Veterinary practitioners will develop knowledge, skills, and resources to receive poultry clients and provide individual bird treatment. (Registration deadline is Sept 23rd)

- Oct 3, 2017; Cleveland Area – OARDC FAHRP, Wooster OH
- Oct 4, 2017; Columbus Area – ODA ADDL, Reynoldsburg OH
- Oct 5, 2017; Cincinnati Area – To be determined

Farm Science Review

Sept 19-21, 2017

Molly Caren Agricultural Center, London, Ohio

Please stop by and visit the College of Veterinary Medicine tent and the “Ask the Expert” program (formerly “Question the Authorities”) in the OSU Central Area.

Ohio Dairy Veterinarians Meeting

- January 3-5, 2018

Save the date – details coming this fall.

Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied.

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Roger Rennekamp, Associate Dean and Director, Ohio State University Extension

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