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Time for a Biosecurity Check on Your Farm

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Biosecurity protocols are indispensable for safeguarding the health and productivity of livestock farms. Recent years have witnessed outbreaks of various diseases such as Avian Flu, Tick-Borne illnesses, Equine Herpesvirus-1, and even dog illnesses attributed to community park activities. The significance of biosecurity measures has been emphasized by the emergence of highly pathogenic avian influenza (HPAI) currently affecting dairy farms in several states, resulting in significant declines in milk production and associated health complications among cattle.

Current reports suggest that HPAI is adversely impacting milk production across all stages of lactation. Clinical signs include sudden drops in milk yield by as much as 20 lbs., alongside severe symptoms such as colostrum-like consistency in milk, reduced feed consumption, diarrhea, and compromised rumen motility. While not all affected cows exhibit fever, some develop secondary conditions like pneumonia or mastitis. Older cows are bearing the brunt of this illness, with dry cows and heifers showing resilience. These symptoms can prove costly in reduced milk production and vet bills. Although most cows recover within a few weeks, some fatalities have been reported.
This situation serves as a reminder of the critical importance of implementing robust biosecurity measures on livestock farms. A quick list to think about who comes to your farm regularly includes family members, friends, external employees, nutritionists, veterinarians, milk truck drivers, inspectors, sales representatives, delivery personnel, cattle buyers, and even your local extension agent. Each visitor could potentially introduce pathogens from other farms, highlighting the interconnectedness of livestock operations and the imperative of stringent biosecurity protocols.
To strengthen biosecurity protocols, farms must adopt comprehensive measures tailored to their specific circumstances. Key steps include:

1. Hygiene Practices: Enforce rigorous hygiene practices, including handwashing, footwear disinfection, and clothing change for anyone entering the farm environment. Provide employees with boots that are only used on your farm and remain on the farm after their shift ends.

2. Animal Health Monitoring: Conduct regular health assessments of livestock, promptly identifying and isolating animals showing signs of illness to prevent disease spread.

3. Collaborative Efforts: Foster collaboration with veterinary professionals, extension services, and industry stakeholders to stay informed about emerging threats and best practices in biosecurity management.

4. Biosecurity Training: Equip farm personnel with adequate training on biosecurity protocols, emphasizing the significance of

adherence to mitigate disease risks effectively.

5. Quarantine Facilities: Maintain designated quarantine areas for new arrivals, including animals, equipment, or personnel, to prevent the inadvertent introduction of pathogens.
6. Restricted Access: Implement controlled access to farm premises, limiting entry only to essential personnel and visitors who adhere to strict biosecurity protocols.
7. Visitor Protocols: Educate visitors about biosecurity expectations and provide necessary facilities, such as protective clothing and disinfection stations, to minimize the risk of pathogen transmission.

The recent outbreak of HPAI reiterates the vulnerability of livestock operations to infectious diseases and the critical role of biosecurity in mitigating such risks. Regardless of geographical location or farm size, implementing stringent biosecurity measures is imperative to safeguard animal health, ensure farm productivity, and mitigate the economic ramifications of disease outbreaks. By prioritizing biosecurity protocols and fostering a culture of vigilance, livestock farms can fortify their defenses against emerging threats and sustainably contribute to global food security.

For additional information about HPAI, biosecurity, and updates regarding this emerging situation, visit: https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/livestock

FDA Statement: *"The FDA does not currently have concerns about the safety or availability of pasteurized milk products nationwide. Pasteurization has continually proven to inactivate bacteria and viruses, like influenza viruses, in milk and is required for any milk entering interstate commerce. We are continuing to monitor the situation and will provide updates on our website if necessary".* For more information visit: https://www.fda.gov/food/milk-guidance-documents-regulatory-information/questions-and-answers-regarding-milk-safety-during-highly-pathogenic-avian-influenza-hpai-outbreaks#safetyandsupply

Enhancing Dairy Cow Welfare: Supporting Isolation Behaviors around Calving

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Consumer concern for dairy cow welfare is on the rise, with 65% of American consumers expressing concern about the welfare of dairy cows. To effectively address these concerns, understanding how we measure animal welfare is crucial. In 1993, the Farm Animal Welfare Committee, an independent advisory body in the UK, established the "Five Freedoms" as a benchmark for animal welfare assessment. These freedoms encompass freedoms from hunger, thirst, discomfort, pain, injury, disease, fear, and distress. Additionally, the "Five Freedoms" establishes that animals should have the freedom to express normal behaviors. While the dairy industry typically addresses the health and wellness of cows well, allowing cows to express their normal behaviors may receive less attention. Research in this area often centers on the timing of calf separation from the dam and increasing pasture access to dairy cows in conventional farms. More recently, there has been growing interest in supporting natural calving behaviors within indoor settings. This article

explores the natural isolation behaviors of dairy cows near calving and strategies to promote these behaviors.

In the wild, calf survival depends on the formation of the dam-calf bond and protection from predators. Cows will travel anywhere from 39 to 4,101 feet to seek an isolated calving site, such as tall grass or shaded trees, away from the herd. However, 60% of US herds utilize indoor group maternity pens for calving. Such pens offer many benefits like reducing pen movements and facility space requirements while still offering close management. Unfortunately, they lack the isolation that calving dairy cows may seek.

Researchers investigated whether dairy cows would choose to give birth in a secluded shelter if given the choice. Cows in indoor pens with access to an isolated shelter, either housed alone or with a partner, displayed a preference for isolation near and during calving. Eight hours before calving, single-housed cows increasingly sought refuge in the shelter. Likewise, pair-housed cows began spending more time apart from their partner 8 hours before calving. However, pair-housed cows faced obstacles in accessing the shelter due to resource guarding by their partner, i.e. the other cow prevented them from entering the shelter. This research highlights the importance of ensuring that resources are provided in a manner that allows all cows unrestricted access. In larger group settings of 6 to 10 cows per bedded pack, researchers further examined how stocking density and the introduction of a "blind" structure (Figure 1) within the calving pen affected cow behavior. Regardless of these factors, cows began distancing themselves from their pen mates 6 hours before calving. Cows in pens with lower stocking densities (~240 ft^2/cow) exhibited this behavior more effectively than cows in greater stocking densities (~125 ft^2/cow). In pens with a blind, 40% of cows chose to calve directly behind or around it and experienced a 15-minute reduction in the duration of labor. This improvement could be attributed to decreased attention from other cows, particularly in the 2 hours leading up to calving. These findings suggest that providing a blind structure allows cows to better isolate during calving, potentially reducing calving stress.

Figure 1. A blind made from plywood and a plastic road barrier filled with water was placed in the middle of the pen. Image provided by Creutzinger et al., 2021.

While lower stocking density and the presence of a blind may reduce calving stress, there is a lack of biological evidence supporting this. In a similar experimental setup, researchers examined the health and cleanliness of cows in these environments. They found that neither markers of inflammation nor metabolic health, typically elevated during times of stress, were affected by stocking density or the presence of a blind. Furthermore, the incidences of dystocia and retained placentas remained unaffected. However, it is noteworthy that the prevalence of metritis was higher in pens with greater stocking density (60%; 93/154 cows vs. 48%; 79/165 cows). This may be associated with cow hygiene, as cows in pens with greater stocking density were observed to be dirtier.

Despite the behavioral benefits, there is a notable absence of data concerning the dam's production post-calving. No research has assessed the impact of isolation behaviors during calving on colostrum production (quantity or quality) or lactation

performance. Additionally, there is no examination of the effect of providing a blind on calf health or growth. These factors could potentially offer economic benefits to producers who implement these modifications in addition to improving welfare. Further research in these areas is critical for a comprehensive understanding of the potential advantages, or disadvantages, of incorporating blinds in calving environments.

In conclusion, domesticated dairy cattle housed indoors demonstrate isolation behaviors within 8 hours of calving. Reducing stocking density and introducing blinds in group maternity pens enhances the welfare of dairy cows near calving by supporting their natural isolation behaviors. While welfare is enhanced, more research is needed to economically justify any major structural changes to existing maternity facilities. For now, it is advisable to utilize cost-effective materials to encourage these behaviors. For instance, plywood or shade cloth can be attached to pre-existing pen fencing. Additional materials can be incorporated into group maternity pens to offer isolation. When building new maternity facilities, take these factors into account to support natural behaviors. Minor tweaks can pave the way to improved welfare without disrupting your current management practices.

Upcoming Events

May 3, 2024
Dairy Skillathon (Youth)

May 4, 2024
VA Spring Holstein Show

May 13, 2024
Hokie Cow Classic

June 8, 2024
Franklin County Livestock Show with Dairy Heifers and new Dairy Steer classes

July 8-11, 2024
Southeast Youth Dairy Retreat
Florida

August 1, 2024
State Dairy Judging Contest (Youth)

If you are a person with a disability and require any auxiliary aids, services, or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office at least 1 week prior to the event.

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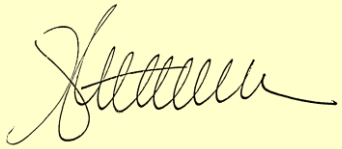

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