University of Prince Edward Island

Faculty of Veterinary Medicine
Summary of Dissertation

Submitted in Partial Fulfilment
of the Requirements for the

DEGREE OF MASTER OF SCIENCE

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Hiding behaviour of newborn dairy calves kept indoors with their dams

Hiding behaviour is common amongst wild animals, yet many farmed animal species are not given the opportunity to hide when kept indoors. The primary aim of this thesis was to explore hiding behaviours in farmed animals, with a focus on newborn dairy calves kept indoors with their dams. Chapter 2 includes a scoping review of the literature on hiding behaviours in farmed animals, with the objectives to: 1) identify the farmed species that have been most used in research investigating the provision of hiding spaces, 2) describe the context in which hides have been provided to farmed animals, and 3) describe the impact (positive, negative or neutral/inconclusive) that hides have on animals, including indicators of animal welfare. Results from this review indicate that although hides had a generally positive impact on farmed animals, more research is needed on the provision of hiding spaces to some animals, such as neonatal dairy calves. Chapter 3 describes an experiment to investigate the effect of providing a hiding place to dairy calves during temporary separation from their dams. The objectives were to: 1) describe how dairy calves use an artificial hide when provided during temporary separation from the dam during the first week of life, 2) assess the effect of a hide on calves' lying and sleep-like behaviour during temporary separation from the dam, and 3) assess the effect of a hide on calves' heart rate and heart rate variability before and during temporary separation from the dam during the first week of life. Results suggest that providing calves with a hide during temporary separation from the dam can affect their sleep-like behaviour and their heart rate variability. Collectively, this work indicates that more research is needed on the use of hiding places as a potential method to improve the welfare of farmed animals.

Presentations

1. Comeau, N., Ternman, E., McKenna, S., Spitzer, H. B., and K. L. Proudfoot. 2022. Pilot study: heart rate and muscle activity as an indicator of sleep in dairy cattle. 2022 National Veterinary Scholars Symposium.

2. Forbes, B., Spitzer, H. B., Meagher, R., Gordon, M., Rose, S., and K. L. Proudfoot. 2022. Assessing the impact of a hiding space on the behaviour and stress response of newborn dairy calves. 2022 National Veterinary Scholars Symposium.

3. Johnson, C., Seeley, K., Meagher, R., Spitzer, H., Stryhn, H., Améndola, L. and K. L. Proudfoot. 2021. The relationship between personality type, age, sex and physiological indicators of chronic stress in ring-tailed lemurs (Lemur catta). 2021 National Veterinary Scholars Symposium.

4. Spitzer, H. B., Meagher, H., and K. L. Proudfoot. 2022. The impact of providing hiding places to farmed animals: A scoping review. North American Regional Meeting for the International Society for Applied Ethology.

5. Spitzer, H. B., Meagher, R. K., Rose, S. E., Gordon, M. B., McKenna, S. L., and K. L. Proudfoot. 2022. The impact of a hiding space on the sleep-like behaviour of newborn dairy calves. University of Prince Edward Island Graduate Studies and Research Conference.

Publications

Spitzer, H. B., Meagher, R. K., & Proudfoot, K. L. (2022). The impact of providing hiding spaces to farmed animals: A scoping review. PloS One, 17(11), e0277665.

Welk, A., Neave, H. W., Spitzer, H. B., von Keyserlingk, M. A. G., & Weary, D. M. (2022). Effects of intake-based weaning and forage type on feeding behavior and growth of dairy calves fed by automated feeders. Journal of Dairy Science, 105(11), 9119-9136

Awards

American Veterinary Medical Association Animal Welfare Assessment Contest: Top Placing Individual for the Interactive Assessment of an Animal Shelter (2022), Atlantic Veterinary College