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Assessment of the Dairy Cattle Horns Current Response

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Introduction

The thermal response of dairy cattle horns is a critical aspect that impacts the overall health and productivity of the animal. The horns of dairy cattle have a vital role to play in regulating the body temperature of the animal. In hotter climates, cattle horns act as a thermal regulator that helps to dissipate excess heat from the animal's body. On the other hand, in colder climates, the horns of cattle provide insulation and help to retain heat, thus keeping the animal warm [1].

Therefore, evaluating the thermal response of dairy cattle horns is of utmost importance to ensure their well-being and productivity. The thermal response of dairy cattle horns is influenced by various factors, such as ambient temperature, humidity, wind speed, solar radiation, and animal behavior. In addition, factors like breed, age, body condition, and coat color also play a role in determining the thermal response of dairy cattle horns. Therefore, it is essential to evaluate the thermal response of dairy cattle horns in a controlled environment that takes into account all these factors.

One of the methods used to evaluate the thermal response of dairy cattle horns is infrared thermography. Infrared thermography is a non-invasive, non-contact technique that allows for the measurement of surface temperature distribution. The technique involves the use of an infrared camera that detects the infrared radiation emitted by the object's surface and converts it into a temperature reading. Infrared thermography has been widely used in various applications, including medical diagnostics, building diagnostics, and industrial processes [2]. In the context of evaluating the thermal response of dairy cattle horns, infrared thermography allows for the measurement of the temperature distribution on the surface of the horns.

Several studies have used infrared thermography to evaluate the thermal response of dairy cattle horns. For instance, a study by used infrared thermography to measure the temperature distribution on the horns of dairy cattle in South Africa. The study found that the temperature distribution on the horns of the cattle varied depending on the ambient temperature and wind speed. In hotter temperatures, the temperature distribution on the horns was more uniform, while in colder temperatures, the temperature distribution was more variable [3].

Description

A study used heat flow sensors to evaluate the thermal response of dairy cattle horns in Bulgaria. The study found that the rate of heat transfer between the horns and the ambient environment was influenced by the ambient temperature, humidity, and wind speed. The study also found that the rate of heat transfer was influenced by the animal's behavior, with more active animals having a higher rate of heat transfer than less active animals. Apart from infrared thermography and heat flow sensors, other methods can also be used to evaluate the thermal response of dairy cattle horns [4].

Several factors influence the thermal response of dairy cattle horns, including the animal's age, sex, breed, and the ambient temperature. Horns have a significant role in heat dissipation in dairy cattle, and younger animals have a higher surface area of the horns per body weight than older animals. Therefore, younger animals are more efficient in heat dissipation through the horns. The sex of the animal also plays a role, with females having a larger horn surface area than males, resulting in better heat dissipation in females. The breed of the animal can also affect the thermal response of horns. For example, Bos indicus breeds have a more significant horn surface area than Bos Taurus breeds, and thus have better heat dissipation. Finally, the ambient temperature plays a crucial role in the thermal response of horns.

In hot and humid conditions, the temperature of the horns can increase, leading to reduced heat dissipation and potentially heat stress in the animal. There are several methods of evaluating the thermal response of dairy cattle horns, including thermal imaging, thermography, and infrared thermometry. Thermal imaging is a non-invasive technique that involves capturing an image of the animal using a thermal camera. The camera captures the heat signature of the animal, including the horns, and creates an image that can be analyzed for temperature variations. Thermography is another non-invasive technique that uses an infrared camera to measure the surface temperature of the animal, including the horns. Infrared thermometry is a more invasive technique that involves inserting a thermometer into the horn canal to measure the temperature inside the horn.

Understanding the thermal response of dairy cattle horns has several implications for dairy cattle farming. The thermal response of the horns can impact the animal's health and productivity, leading to implications for milk production and overall profitability. Heat stress is a significant concern for dairy cattle farming, and the thermal response of the horns can be used to assess the animal's susceptibility to heat stress. By monitoring the thermal response of the horns, farmers can take appropriate measures to reduce heat stress and maintain the animal's health and productivity. This may include providing shade, fans, or other cooling methods to reduce the ambient temperature around the animal.In addition, the thermal response of the horns can be used to evaluate the effectiveness of breeding programs. By selecting animals with a better thermal response, farmers can improve the overall heat dissipation of the herd, reducing the risk of heat stress and improving milk production. The thermal response of the horns can also be used to assess the impact of environmental factors, such as climate change, on dairy cattle farming. As temperatures increase due to climate change, the thermal response of the horns may change, leading to implications for animal health and productivity [5].

Conclusion

The thermal response of dairy cattle horns is an important factor in dairy cattle farming, with implications for animal health, productivity, and overall profitability. Factors that influence the thermal response include the animal's age, sex, breed, and ambient temperature. There are several methods of evaluating the thermal response, including thermal imaging, thermography, and infrared thermometry. Understanding the thermal response of dairy cattle horns can help farmers take appropriate measures to reduce heat stress and improve.

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Conflict of Interest

There is no conflict of interest by author.

References

1. Nordquist, Rebecca E., Franz Josef Van der Staay, Frank JCM Van Eerdenburg

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and Francisca C. Velkers, et al. "Mutilating procedures, management practices, and housing conditions that may affect the welfare of farm animals: Implications for welfare research." *Anim* 7 (2017): 12.

2. Winder, Charlotte B., Cynthia L. Miltenburg, Jan M. Sargeant and Stephen J. LeBlanc, et al. "Effects of local anesthetic or systemic analgesia on pain associated with cautery disbudding in calves: A systematic review and meta-analysis." *J. Dairy Sci* 101 (2018): 5411-5427.

3. Neave, Heather W., Rolnei R. Daros, João HC Costa and Marina AG von Keyserlingk, et al. "Pain and pessimism: Dairy calves exhibit negative judgement bias following hot-iron disbudding." *PloS one* 8 (2013): e80556.

4. Preston, B. T., I. R. Stevenson, J. M. Pemberton and D. W. Coltman, et al. "Overt and covert competition in a promiscuous mammal: The importance of weaponry and testes size to male reproductive success." *Proc R Soc Lond B Biol Sci* 270 (2003): 633-640.

5. Bikker, J. P., H. Van Laar, P. Rump and J. Doorenbos, et al. "Evaluation of an ear-attached movement sensor to record cow feeding behavior and activity." *J Dairy Sci* 97 (2014): 2974-2979.

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