

combined, and ranged from 6% to 51% by pen. On farm 2, the lameness prevalence of all cows scored was 16%, and ranged by pen from 9% to 20%. Estimated lameness prevalence based on arched-back position was 10.5% for the herd and ranged by pen from 4.5% to 17%. Presence of an arched back while standing in the lock-up predicted lameness in individual cows with 44% sensitivity and 95% specificity. Agreement beyond chance for the two methods was considered “moderate” (Kappa=0.41).

Significance

The sampling strategy using milking parlor exit order was effective at estimating herd prevalence

when samples from all pens were combined. Pen level variation requires sampling all pens. The presence of an arched-back position in cows in lock-ups predicts lameness in those cows, but these preliminary data suggest that this lameness assessment strategy underestimates herd prevalence. However, lameness assessment using arched-back position has promise for wide adoption, as it could easily be incorporated into routine herd management procedures. Further work is needed to refine and validate the arched-back method.

Is Thermography a Possible New Method to Evaluate Body Temperature in Fresh Cows?

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Introduction

The period comprising one month postpartum represents the highest risk of disease occurrence in dairy cows. In freestall systems in general, cows are housed in post-fresh pens after calving where intense health surveillance has been recognized as a major determinant of cow performance during the subsequent lactation. Rectal body temperature (RT) and appetite are the most important indicators of health status, but their assessment is sometimes neglected due to time constraints, yielding poor compliance with health surveillance protocols. Thermography has largely shown the capability to accurately and quickly evaluate body temperature in other species such as humans, and widespread usage of this technology has made affordable and manageable thermographic units more available.

With the advantage of a rapid measurement, the objective of the study is to evaluate whether thermography can be comparable to RT as a diagnostic test to identify cows over an established RT threshold.

Materials and Methods

In a commercial dairy farm, rectal and thermographic temperature was evaluated daily in cows after calving (0-7 days postpartum) for eight days. One to five days of temperature data were obtained for each

cow during that period. During each daily evaluation, a hand-held thermographic unit (E50, Flir) was used to obtain an instantaneous measure of the maximum temperature registered in the orbital area in both eyes. One rectal temperature was afterward recorded using a GLA 525 thermometer. Electronic health and demographic records were also retrieved from the farm software (DC305). Repeated measures analysis and receiver operating curves (ROC) will be used to evaluate the characteristics of thermography as a test to evaluate body temperature in comparison to RT.

Results

Preliminary results yield an overall sensitivity and specificity (95% CI) of 70.7% (59.5, 80.0) and 89.5% (85.4, 92.5) respectively, after adjusting for the atmospheric temperature during the day of the visit and for a threshold RT cut-point of 103°F (39.4°C). Results from the repeated measures analysis and ROC graphs will be reported.

Significance

Quick determination of body temperature and simultaneous evaluation of appetite are health indicators that could be facilitated with the use of thermography.