

percent (690/820) of respondents preferred to inseminate on observation of strong signs of heat, but 45% (365/820) indicated that they found it difficult to detect cows in heat. The average (\pm SD) PR, IR, and CR were $17 \pm 5\%$, $43 \pm 11\%$, and $40 \pm 9\%$, respectively. Pregnancy rate was lower ($P < 0.05$) in tie-stall barns (15.2%, 95% CI=14.4-16.0%) than in free stalls (17.9%, 95% CI=17.2-18.6%), in herds inseminating once per day (15.7%, 95% CI=14.9-16.6%) than in herds inseminating twice per day (17.8%, 95% CI=16.8-18.7%), and in herds with < 100 lactating cows (16.2%, 95% CI=15.5-16.8%) than in herds with more than 250 lactating cows (20.1%, 95% CI=17.2-22.9%). Pregnancy rates were not significantly different by main reproduction management practice: visual heat detection (15.9%, 95% CI=15.0-16.8%), TAI (16.7%, 95% CI=15.4-18.0%), AAM (17.4%, 95% CI=16.0-18.9%), or combined practices (18.2%, 95% CI=16.6-19.9%). Insemination rate was lower in herds using visual heat detection (40.0%, 95% CI=37.3-42.6%) than in herds using TAI (47.4%, 95% CI=43.8-50.9%), or combined practices (46.7%, 95% CI=42.6-50.7%), but was not significantly different from herds using AAM (44.0%, 95% CI=40.3-47.7%). Conception risks were numerically lower in herds using TAI (36.8%, 95%

CI=33.0-40.3%) than in herds using visual heat detection (40.7%, 95% CI=37.2-44.1%), AAM (40.0%, 95% CI=36.1-43.9%), or combined practices (39.8%, 95% CI=35.8-43.9%), but not significantly different. Producers' attitudes regarding reproduction or management practices were not associated with herd reproductive performance.

Significance

Contrary to our hypothesis, dairy herd owners' attitudes and sentiments toward reproductive performance and management (as measured in this questionnaire) were not associated with their herd's pregnancy rate. Larger free-stall herds, on average, had higher pregnancy rates than smaller and tie-stall herds, but reproductive performance did not differ significantly among the main methods used to manage insemination. Therefore, we speculate that pregnancy rate may be more influenced by factors other than the main management practice they used, such as the effectiveness or consistency of implementation of chosen management techniques within a herd.

Accuracy and intensity of estrus detection with activity monitoring systems for lactating dairy cows

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Introduction

Activity monitors are becoming a widely used tool for estrus detection in dairy cows. The objective of this study was to assess the intensity and accuracy of estrus detection with automated activity monitoring systems.

Materials and Methods

Three commercial dairy farms with an activity monitoring system (Heatime, SCR Inc, or Afi PedoPlus, Afikim) used for essentially all inseminations between 50 and 80 days-in-milk (DIM) were enrolled in this observational study. Herds were visited once weekly. Blood samples were collected at weeks 5, 7, and 9 postpartum and from a subset of cows on the day of insemination, to measure serum progesterone concentration. Cows were examined at week 5 for purulent vaginal discharge (PVD). Lameness and body condition were scored at week 7. Cows were classified as anovular if all 3 blood samples from weeks 5, 7, and 9 had progesterone < 1 ng/ml.

Results

Overall, 6.7% of cows were anovular (range of 3.6% to 8.2% among farms). Of these cows, 39% had a lameness score of 3 or above (1 to 5 scale) and 29% had PVD. Among cows that reached 80 DIM ($n=419$), 14% had not been inseminated by 80 DIM; of these, 12% were anovular, 23% were lame, 21% had PVD, and 4% had a BCS of < 2.5 . Among 352 blood samples taken on the day of insemination, 212 were signaled by the activity system and 140 by Ovsynch; 8% and 3%, respectively, had progesterone > 1 ng/ml, i.e. the cows were not in estrus.

Significance

In this sample, the accuracy of detection of estrus by automated activity monitors was high, but a subset of cows would likely require intervention for timely first AI and only a fraction of these were truly not cyclic.