Electronic or Visual Detection of Estrus versus Timed-AI*

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The objective was to determine the efficiency of an electronic mount-detection system (Heatwatch™) for reproductive management of Holstein cows and heifers in Alberta herds. Two trials were conducted with lactating cows. In a free-stall herd, 104 cows were inseminated after detection of estrus with either Heatwatch (n=24) or visual detection (n=47), or time-inseminated (n=33) following an Ovsynch protocol (without estrus detection); conception rates were 40, 35 and 42%, respectively. Heatwatch patches became partially (>80%) or completely (>30%) detached in many cows (particularly in cold weather), with substantial labor required to maintain or reapply patches. More cows were bred to visual heat detection because some cows that lost the Heatwatch patches were reassigned to the visual detection group. In a tie-stall herd, 49 cows were assigned to Heatwatch and 48 to Ovsynch/TAI. Cows were removed from their stalls and allowed to interact for 45 minutes twice daily. From 50 to 100 days after calving, 29 versus 100% of the cows assigned to HeatWatch versus an Ovsynch protocol were inseminated, with conception rates of 36 and 25%, respectively. Although patch-retention was excellent (likely due to limited opportunities for mounting and minimal exposure of the patches to cold air and precipitation), the short duration of interaction with herdmates probably limited mounting activity. In a third trial, 77 loose-housed heifers of breeding-age were assigned to either Heatwatch (n=38) or visual heat detection (n=39). Estrus detection rate during a 2-month period was 84 and 100%, for Heatwatch and visual detection, and conception rates were 50 and 33%, respectively. Reasons for the poor conception rate were unknown. Detachment of patches was a greater problem in heifers. Based on over 80 estrus period observations by Heatwatch, the average estrus in cows lasted 6.1 h, with 8 mounts (range, 1 to 34 mounts), whereas in heifers, it averaged 10.7 h and 27 mounts (range, 2 to 169). Partial or complete detachment of patches (in cows or heifers housed in groups and exposed to the elements) required excessive monitoring and labor.

Take Home Message: Even though the software and hardware components worked efficiently, the Heatwatch system was not practical for routine reproductive management of dairy cows and heifers in Alberta herds due to the excessive time and labor associated with patch-maintenance.

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