Comparing Timed AI to Electronic Estrus Detection in Holstein Heifers*

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An electronic mount detection system (Heatwatch™) and a timed AI (TAI) protocol that included a progesterone device were compared for reproductive management of dairy heifers. Holstein heifers (n=88) were assigned randomly to either HeatWatch or the TAI protocol. The TAI protocol involved two treatments of gonadotropin releasing hormone (2 mL of Fertiline; Vétoquinol) given on Days 0 and 9. A progesterone device (CIDR; Bioniche) was placed intravaginally from Day 0 to 8. Prostaglandin (5 mL of Lutalyse; Pfizer) was given on Day 7. Insemination occurred 16-20 h after the second GnRH injection. Heifers assigned to Heatwatch remained on the program for 4 wk and bred if detected in estrus within that period. A 100% AI submission rate was achieved with TAI, which was significantly greater than with Heatwatch. Even though conception rates did not differ, pregnancy rates were considerably higher with TAI. Results are summarized in the table below:

Table 1. AI submission, conception, and pregnancy rates in heifers inseminated with or without estrus detection.

	Timed AI	HeatWatch	Probability
AI submission rate	47/47 (100%)	25/41 (61%)	<0.01
Conception rate	34/47 (72%)	19/25 (76%)	0.73
Pregnancy rate	34/47 (72%)	19/41 (46%)	0.01

Even though the Heatwatch system was effective for estrus detection when patches and transmitters remained in place, patches remained attached to the back of heifers only for a few hours to few days, at best. It was extremely labor-intensive as patches had to be re-glued almost on a daily basis. As a result, a small number of heifers (that lost their patches) were bred at visually detected estrus. These heifers are included in the Heatwatch results. Four different adhesive agents were tried without success. A CIDR-based TAI protocol was found superior to electronic estrus detection for reproductive management of heifers in this study.

Take Home Message: Heatwatch-based estrus detection was extremely labor-intensive because the patches had to be re-glued frequently. High pregnancy rates were obtained with a CIDR-based TAI protocol described in this study.

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