

Increased Pregnancy Rates in Dairy Cows Following a Modified Ovsynch/TAI Protocol

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We examined the use of 25 mg porcine luteinizing hormone (pLH; Lutropin-V, Bioniche Animal Health) or 100 µg gonadotropin releasing hormone (GnRH; Fertiline; Vetoquinol Canada Inc.) and 500 µg cloprostenol (PG; Estrumate, Schering Plough Animal Health) on ovulatory response and pregnancy rate following timed-AI (TAI) in lactating dairy cows (n=495). Cows at three locations were assigned to receive 1 of 4 treatments: GnRH/PG/GnRH, pLH/PG/GnRH, GnRH/PG/pLH or pLH/PG/pLH. Cows were treated at random stages of the estrous cycle with pLH or GnRH im on Day 0, PG im on Day 7, and pLH or GnRH on Day 9 with timed-AI (TAI) 12-16 h later (Day 10). Ultrasonographic examinations were performed in a subset of 331 cows on Days 0, 7, 10, 11, and 14 for ovulation, CL and follicle development, and in all cows on Day 32 for confirmation of pregnancy. In 36 cows, blood samples were taken to determine progesterone concentrations after TAI. The proportions of non-cycling cows and cows with ovarian cysts at initiation of the synchronization protocol were 12 and 6%, respectively. Overall, 29% of cows either ovulated before TAI, did not respond to PGF or to the second GnRH/pLH. None of the cows that failed to respond to PG or ovulate following the second pLH or GnRH treatment conceived. Pregnancy rate to TAI was greater ($P<0.05$) in the GnRH/pLH group (41%) than in the other three groups (29, 29, and 27% for GnRH/GnRH, pLH/GnRH, and pLH/pLH, respectively). Ovulatory response to 1st treatment was 62 vs. 44% for pLH and GnRH groups ($P<0.01$) but this increase did not contribute to an improvement in pregnancy. Ovulatory response to the 2nd treatment did not differ among GnRH and pLH groups. Furthermore, plasma progesterone concentrations were also not different among treatment groups. Cyclicity status, presence of an ovarian cyst, and preovulatory follicle size did not affect pregnancy rate ($P>0.05$).

Take Home Message: A modified Ovsynch protocol involving treatments of GnRH (Fertiline, Day 0) PG (Estrumate, Day 7) and pLH (Lutropin-V, Day 9) followed by TAI 12-16 hours later, consistently improved pregnancy rates in all three locations without increasing progesterone concentrations during the post-insemination period.

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