Modifications of the Heatsynch Protocol for Natural-service Breeding in Dairy Cows

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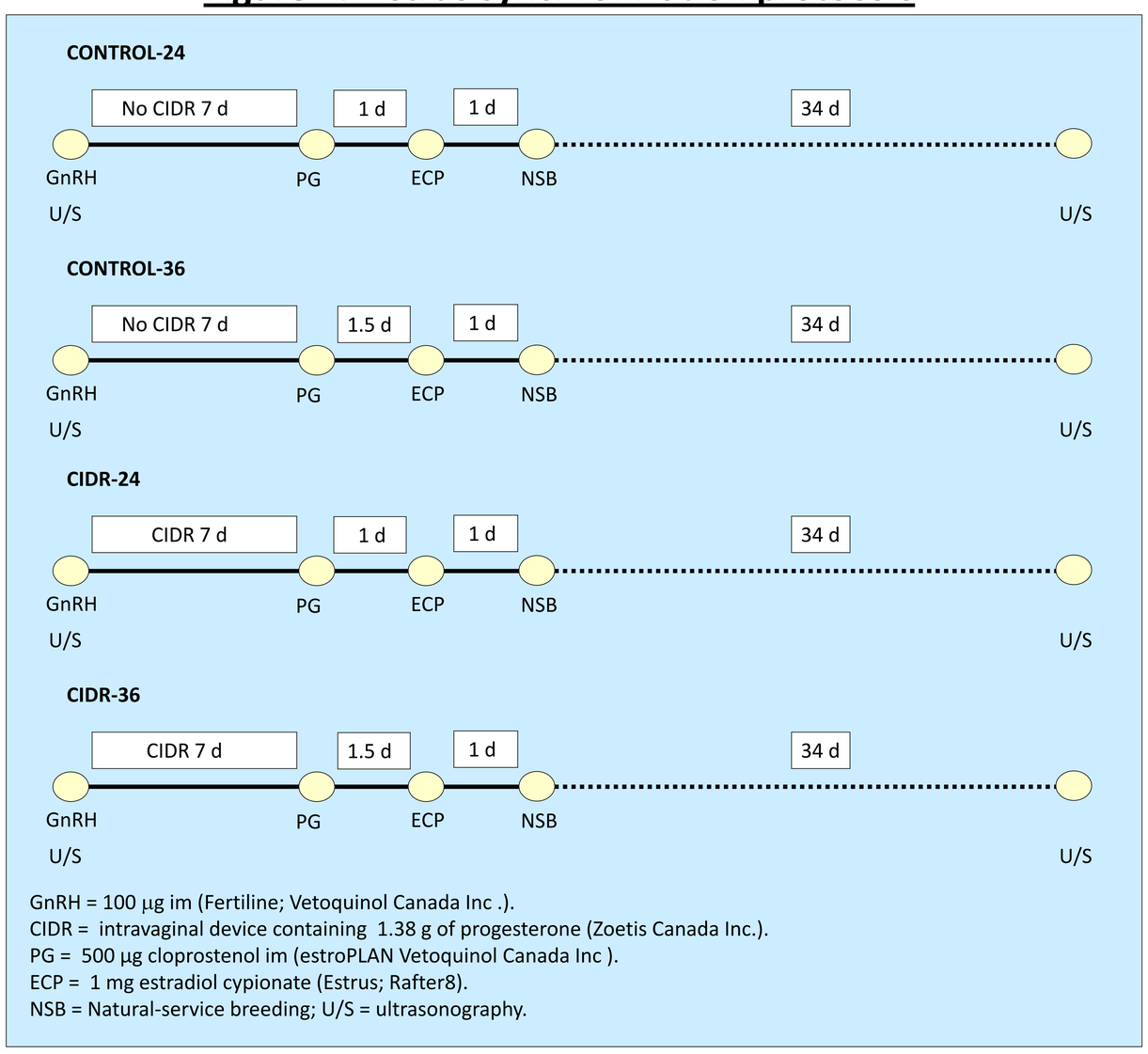
BACKGROUND

- Hutterite dairy farms utilize natural service as a component of their breeding program.
- Most of the herds use the "Heatsynch" program, which is a slight modification of Ovsynch. An injection of estradiol cypionate (ECP) 24 hours after the injection of PGF2α (PG) is given in lieu of the second injection of GnRH.
- We investigated whether the administration of a progesterone-releasing vaginal insert (CIDR) and/or delaying the administration of ECP would improve fertility in lactating dairy cows subjected to a Heatsynch and bred by natural service.

APPROACH

- 112 lactating dairy cows (56 were presynchronized with 2 PG 14 days apart).

Figure 1. Estrus synchronization protocols

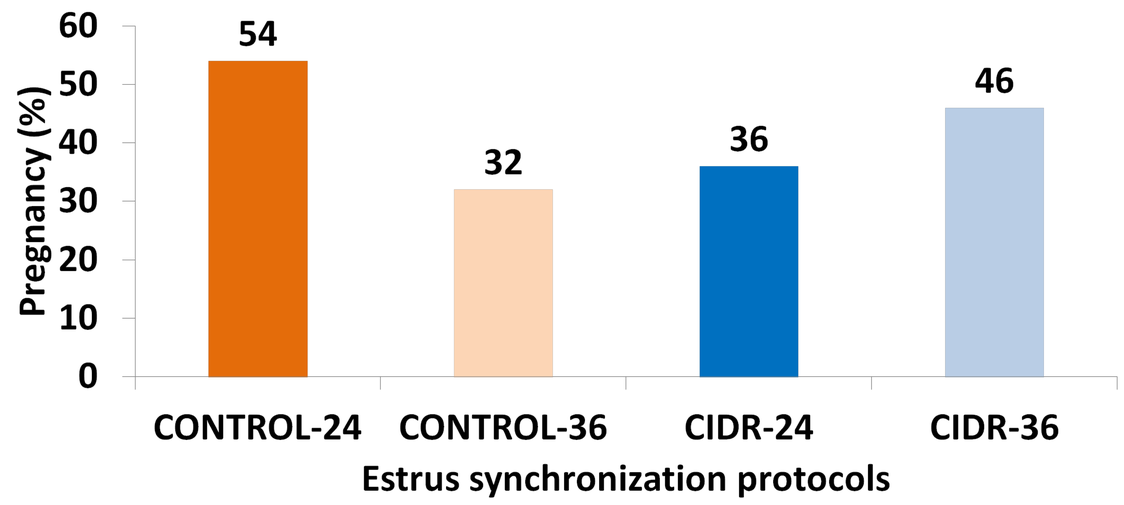


GnRH = 100 μg im (Fertiline; Vetoquinol Canada Inc .).
CIDR = intravaginal device containing 1.38 g of progesterone (Zoetis Canada Inc.).
PG = 500 μg cloprostenol im (estroPLAN Vetoquinol Canada Inc).
ECP = 1 mg estradiol cypionate (Estrus; Rafter8).
NSB = Natural-service breeding; U/S = ultrasonography.

- Statistical analyses with PROC GLIMMIX in SAS 9.3.

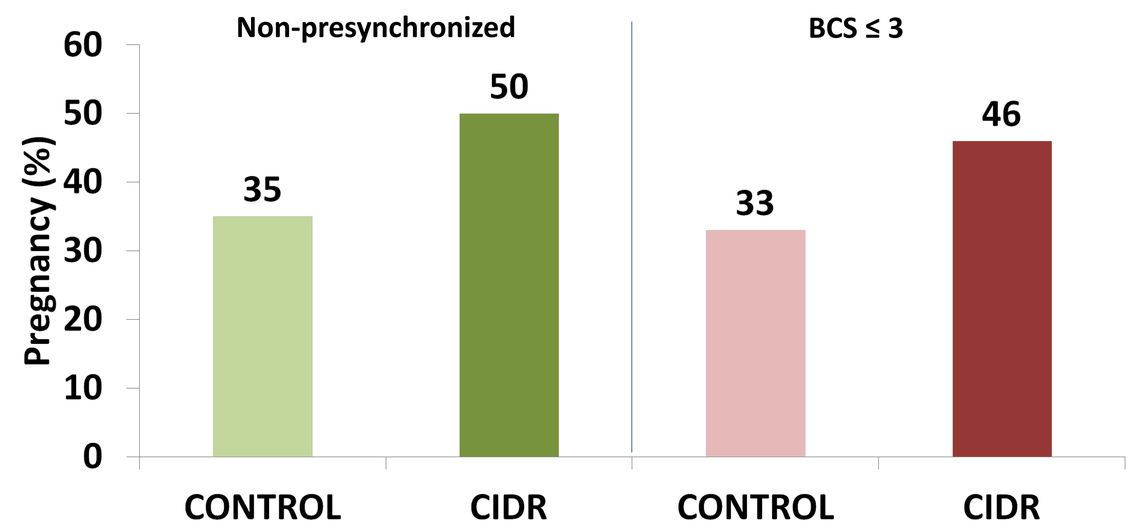
FINDINGS

Figure 2. Effect of estrus synchronization protocols on conception rate.



- Cows in the Control group had greater (P<0.05) conception rates if ECP was given at 24 hours after PG.
- CIDR-treated cows had numerically greater conception rates if ECP was given at 36 hours after PG.

Figure 3. Effect of CIDR treatment on conception rate.



- CIDR treatment increased (P<0.01) conception rate in non-presynchronized cows and tended (P<0.08) to increase conception rate in those with a BCS of ≤ 3.

SUMMARY

- ECP should be given at 24 hours after PG in cows subjected to a Heatsynch without CIDR.
- In cows that are not presynchronized or those with low BCS, addition of a CIDR and ECP treatment at 36 hours after PG is recommended.
- Implementation of these protocols increased the herd 21-d pregnancy rate from 17 to 29%.

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