

19. EFFICACY OF OESTRUS SYNCHRONIZATION REGIMENS WITH PGF_{2α} AND PROGESTERONE IN DAIRY HEIFERS

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Luteal status can affect oestrus response rate and conception rate to prostaglandin-based (PGF_{2α}) synchrony treatments (1). To evaluate the efficacy of an oestrus synchrony protocol with 2 injections of prostaglandin with or without progesterone supplementation in dairy heifers. This study included 840 dairy heifers from 4 spring-calving dairy herds. All heifers were treated with 2 i.m. injections of PGF_{2α} (Lutalyse; Pharmacia Australia) 11 days apart. The heifers were randomly assigned to a progesterone (P4; $n = 424$) or untreated group (control; $n = 416$). Heifers in the P4 group were treated for 5 days prior to the second PGF_{2α} injection with an intravaginal progesterone-releasing device containing 1.38 g of progesterone (CIDR, Genetics Australia). Blood samples were collected via puncture of a coccygeal vessel at 7 days (Day -7) and 2 days (Day -2) prior to the start of breeding. There were no differences ($P > 0.05$) in plasma progesterone concentrations on Day -7 [(P4, 3.44 ± 0.27 , ng/mL) v. (control, 3.46 ± 0.26 , ng/mL)]. P4-treated heifers had higher ($P < 0.001$) progesterone concentrations on Day -2 [(P4, 7.77 ± 0.39 , ng/mL) v. (control, 6.23 ± 0.39 , ng/mL)]. A greater proportion ($P < 0.001$) of P4-treated heifers (375/424 (88%)) were submitted for artificial insemination than controls (332/416 (80%)). Conception rate [P4, 178/375 (47%) v. control, 151/332 (45%)] or pregnancy rate [P4, 178/424 (42%) v. control, 151/416 (36%)] did not differ ($P > 0.05$) between treatments. The greater proportion of heifers submitted for AI in the P4-treated group was associated with increased plasma progesterone concentrations 2 days prior to the start of breeding.

(1) Xu *et al.* (1997) *Theriogenology* 57: 687–701.