

Equine chorionic gonadotropin and gonadotropin-releasing hormone enhance fertility in a norgestomet-based, timed artificial insemination protocol in suckled Nelore (*Bos indicus*) cows

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Resumen

Two experiments were conducted to investigate the effects of equine chorionic gonadotropin (eCG) at progestin removal and gonadotropin-releasing hormone (GnRH) at timed artificial insemination (TAI) on ovarian follicular dynamics (Experiment 1) and pregnancy rates (Experiment 2) in suckled Nelore (*Bos indicus*) cows. Both experiments were 2 × 2 factorials (eCG or No eCG, and GnRH or No GnRH), with identical treatments. In Experiment 1, 50 anestrous cows, 134.5 ± 2.3 d postpartum, received a 3 mg norgestomet ear implant sc, plus 3 mg norgestomet and 5 mg estradiol valerate im on Day 0. The implant was removed on Day 9, with TAI 54 h later. Cows received 400 IU eCG or no further treatment on Day 9 and GnRH (100 µg gonadorelin) or no further treatment at TAI. Treatment with eCG increased the growth rate of the largest follicle from Days 9 to 11 (means ± SEM, 1.53 ± 0.1 vs. 0.48 ± 0.1 mm/d; P < 0.0001), its diameter on Day 11 (11.4 ± 0.6 vs. 9.3 ± 0.7 mm; P = 0.03), as well as ovulation rate (80.8% vs. 50.0%, P = 0.02), whereas GnRH improved the synchrony of ovulation (72.0 ± 1.1 vs. 71.1 ± 2.0 h). In Experiment 2 (n = 599 cows, 40 to 120 d postpartum), pregnancy rates differed (P = 0.004) among groups (27.6%, 40.1%, 47.7%, and 55.7% for Control, GnRH, eCG, and eCG + GnRH groups). Both eCG and GnRH improved pregnancy rates (51.7% vs. 33.8%, P = 0.002; and 48.0% vs 37.6%, P = 0.02, respectively), although their effects were not additive (no significant interaction). In conclusion, eCG at norgestomet implant removal increased the growth rate of the largest follicle (LF) from implant removal to TAI, the diameter of the LF at TAI, and rates of ovulation and pregnancy rates. Furthermore, GnRH at TAI improved the synchrony of ovulations and pregnancy rates in postpartum Nelore cows treated with a norgestomet-based TAI protocol.

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