

Effect of eCG on ovarian function of Curraleiro Pé-Duro cows submitted to a FTAI protocol

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The Curraleiro/Pé-Duro is a bovine breed that descends from cattle brought to the Americas by the Portuguese and Spanish settlers. Raised extensively and extremely rustic this breed is very well adapted to harsh environments becoming resistant to climatic stress, diseases and parasites. Even so, over the last century this breed has become in risk of extinction due to crosses with exotic breeds, particularly the zebu cattle. To avoid the loss of this genetic resource this breed was include in conservation program. Thus it's important to study some aspects of the reproductive physiology like the responses to a FTAI protocol. This information will help to better plan a strategy of reproductive management supporting Curraleiro Pé-Duro preservation and diffusion. The aim of this study was to determine the effect of equine chorionic gonadotropin (eCG) on follicular dynamics in a FTAI protocol. Twelve single cows with a mean body condition score (BCS) of 3 (1-5) were maintained in grazing conditions (*Brachiaria decumbens*) with *ad libitum* water and mineral supplementation. A cross-over experiment was conducted in the dry winter (relative humidity can be as low as 12%) in which all animals participated from all groups after the last replicate. Control group (n = 12) received estradiol benzoate (EB; 2 mg IM) and a progestin intravaginal device containing 1 g of progesterone on Day 0. On day 8 the vaginal device was removed and cloprostenol (PGF_{2α}; 0.265 mg; IM) and EB (1 mg IM) were administered. eCG group received the same protocol as Control with the addition of eCG (300 UI; IM) on day 8. Ultrasonography evaluations (Aloka, 7.5 MHz) were performed on days 8, 10 and every 6 hours after that. The statistical analysis was carried out using the SAEG software and significance was considered if P<0.05. Dominant follicle development was observed in 75.5% and 83.33% of the animals in the Control (9/12) and eCG (10/12) treatment groups, respectively (P>0.05). Cows without evidence of follicle growth were removed from the statistical analysis. There was no effect of eCG administration (Control compared with eCG; P>0.05) on follicle diameter on day 8 (8.9 ± 0.4 mm compared with 8.9 ± 0.2 mm), on day 10 (10.2 ± 0.5 mm compared with 10.0 ± 0.3 mm), on ovulatory follicle [10.9 ± 0.4 mm (n = 6) compared with 11.4 ± 0.3 (n = 8)], ovulation rate [66.67% (6/9) compared with 80% (8/10)] and interval between P4 device removal to ovulation (68 ± 9,4 h compared with 63 ± 6 h). The use of eCG at the time of P4-releasing intravaginal device removal has been used as an alternative to increase ovulatory responses and pregnancy rates in cows submitted to FTAI. Although eCG tends to be more effective in cows at early postpartum stage (anestrus), under nutritional stress or in early lactation in primiparous. So the lack of significance in the experiment is probably a consequence of the single status of the subjects and their good BCC even though the experiment was done during the dry season, which is another evidence of the adaptation to harsh environments native to these animals.

Keywords: Curraleiro Pé-Duro, follicular dynamics, eCG, FTAI

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