Animal Reproduction

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FOLLICULOGENESIS, OOGENESIS AND SUPEROVULATION

The influence of different timings of CIDR insertion on the embryo yield in locally adapted superovulated Brazilian goats

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This study aimed to investigate whether the variation (morning or afternoon) in the insertion of progesterone (P4) intravaginal device (IVD) affects embryo yield in locally adapted superovulated goats. A total of 16 Canindé and 22 Moxotó goats were equally assigned to two groups according to the time of insertion (G1: 06:30 to 07:30 a.m. and G2: 06:30 to 07:30 p.m.) of the IVD containing 0.3 g of P4 (Eazi-Breed CIDR®; Pfizer, São Paulo, Brazil), which remained for six days. The superovulatory protocol consisted in administration of pFSH (133 mg i.m.; Folltropin-V®; Bioniche Animal Health, Belleville, Canada) in six doses (25, 25, 15, 15, 10, and 10%) at 12 h intervals, starting 60 h before IVD removal. Three doses of cloprostenol (131.5 µg i.m.; Sincrocio®, Ouro Fino, Cravinhos, Brazil) were administered at IVD insertion, simultaneously with the fifth dose of pFSH and 8 h before non-surgical embryo recovery (NSER). At 24 h after IVD removal, goats received gonadorelin acetate (25 µg i.m.; Gestran®, Tecnopec, São Paulo, Brazil). Donors were mated every 12 hours during estrus with fertile bucks (n = 9). Three doses of flunixin meglumine (75 mg i.m.; Flumax®, J.A. Saúde Animal, São Paulo, Brazil) were administered 3, 4, and 5 days after the onset of estrus, and NSER was performed 7 d after the first mating. Ultrasound evaluations were performed before NSER for CL count. Data were subjected to ANOVA or chi-square test, and P≤0.05 was considered significant. Two goats from each group (1 Moxotó and 3 Canindé) exhibited total precocious regression of corpora lutea (PRCL) and had no structures recovered. Five goats (G1: n = 2 and G2: n = 3; 3 Moxotó and 2 Canindé) presented partial PRCL, with viable embryos successfully recovered. The interval from IVD removal to onset of estrus (20.5 ± 1.7h and 21.9 ± 1.7h), number of mating (1.8 ± 0.1 and 1.8 ± 0.1), number of CL per female (16.5 ± 1.5 and 14.8 ± 1.7), total structures recovered per female (6.9 ± 1.2 and 7.0 ± 0.8), recovery rate (42.7 ± 6.4% and 52.8 ± 5.6%), number of viable (grades 1, 2 or 3) embryos recovered per flushed female (6.2 ± 1.2 and 6.1 ± 0.9), number of morulae (2.2 ± 1.1 and 1.7 ± 0.5) and blastocysts (4.0 ± 0.9 and 4.4 ± 0.8), for G1 and G2, respectively, showed similar results (P > 0.05). Percentage of morulae (29.9 and 30.5%) and blastocysts (73.2 and 71.4%) and embryo viability (82.2 and 82.7%) were also similar (P > 0.05) between groups. As expected for NSER performed 7 d after mating, the proportions of blastocyst were superior to morulae in both groups (P < 0.01). We concluded that the difference in the timing of IVD insertion does not affect the efficiency of embryo yield in locally adapted superovulated Brazilian goats.