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Efficiency of superovulatory treatment started near the time of emergence of the first or last follicular waves of progesterone protocol in Santa Ines ewes during non-breeding season

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This study was designed to investigate if the time of onset of FSH treatment (near the emergence of first or last follicular wave of P4 protocol) influenced the superovulatory response and embryo yield in Santa Ines ewes during non-breeding season (between the months of July to November). Days of emergence of follicular waves were defined in a previous study that evaluated the follicular dynamic during estrus synchronization treatments (Oliveira et al., Acta Scientiae Veterinariae, v.40, p.361, 2011). Twenty Santa Ines ewes were submitted to one of two superovulatory protocols according to the time FSH treatments were initiated (G-first wave, n=10 and G-last wave, n=10). On Day 0 all ewes received a P4 device (CIDR®) and injection of 37.5 µg of D-cloprostenol, i.m. The FSH treatments started on Days 4 and 10 of protocol for G-first and G-last, respectively. The superovulatory regimen consisted of eight i.m. injections of pFSH administrated twice daily (40, 40, 30, 30, 20, 20, 10 and 10 mg of pFSH). The P4 device was removed on Day 6 and 12 for G-first and G-last, respectively. At CIDR removal, all ewes received another injection of 37.5 µg of D-cloprostenol and a dose of 200IU of eCG. During four days after the P4 device removal, ewes were mated by a fertile ram. The superovulatory response was evaluated through examination of the ovaries by ultrasonography (three times daily, during the mating period) and laparoscopy (concomitantly the embryo collections). Embryo collections were accomplished 7 days after CIDR withdrawal by laparotomy, and classified according to their development. A sample number of embryos of each treatment were also fixed and stained by TUNEL techniques to assess the apoptotic cells percentage. Data were analyzed by GLIMMIX using SAS. There was no effect between treatments (P>0.05) for the superovulatory response (percentage of ovulated follicles: 89.20±4.15% vs. 83.50±6.17%; number of ovulations: 12.40±0.95 vs. 12.60±1.87; number of luteinized unovulated follicles: 1.70±0.70 vs. 3.10±1.59 for G-first wave and G-last wave, respectively). Similarly, there was no effect (P>0.05) on embryos yields (recovery rate: 69.90±5.61% vs. 51.70±7.50%; mean number of structures recovered: 8.60±1.01 vs. 5.90±0.90; number of viable embryos: 3.20±0.81 vs. 1.80±0.80; and viability rate: 40.50±11.93 vs. 32.70±11.74, for G-first wave and G-last wave, respectively). Moreover, there was no effect between treatments (P>0.05) for the apoptotic cells percentage (G-first wave: 3.10±1.66% and G-Last wave: 12.76±4.34%). In conclusion, there were no differences in superovulatory response and embryo yield between FSH treatments initiated during the first or last follicular waves of progesterone treatment in Santa Ines ewes during non-breeding season.

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