Animal Reproduction

Folliculogenesis, oogenesis, and superovulation

Do sheep breed effect influence superovulatory responses and embryos yields?

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The aim was evaluated the breed effect on superovulatory responses and embryo yields in Brazilian native ewes submitted to a mid-term progesterone-based protocol and gonadotrophic treatment with 133 mg of pFSH. The study was conducted in the northeast of Brazil in ewes of three breeds: Morada Nova (MN; n=10); Santa Inês (SI; n=10) and Somalis (SO; n=10). On random day of estrous cycle (Day 0) all ewes received an intravaginal device of progesterone (0,3g of P4, CIDR®, Zoetis, Brazil) for nine days. On Day 7 started the pFSH (133mg, Folltropin V®, Vetoquinol, Brazil) treatment in six decreasing doses (25-25-15-15-10-10%) administered i.m. at 12h intervals. On Day 9 were injected two equal doses of d-cloprostenol (37.5 µg, Prolise®, AgenerUnião, Brazil) at 12h interval. All ewes showed estrus and were mated by fertile rams. To prevent corpora lutea (CL) regression, ewes received three administration i.m. of flunixin- meglumine (24.9mg; Banamine®, MSD, São Paulo, Brazil) on Days 12, 13 and 15. On Day 16 was performed non-surgical embryo recovery (NSER) after cervical dilation using d-cloprostenol and estradiol benzoate at 16h and ocytocin at 20 min before. Transrectal 7.5 MHz B-mode ultrasound (Z5 Vet®, Mindray, China) were performed at 36h after P4 device removal (Day 11) and at 12h before of the NSER (Day 15) to see the ovarian population. Data was analyzed using ANOVA followed by Tukey test ($p<0.05$). The number of medium follicle (4.0-5.9mm) on Day 11 was lesser ($P=0.002$) in MN (3.90±0.77) than SI (10.00±1.26) and SO (8.80±1.44). However, the other variables on Day 11: number of total antral follicles (MN=18.70±2.23, SI=31.30±5.49 and SO=25.10 ± 2.88), small follicles (≤ 3.9mm) (MN=13.90±1.87, SI=20.20±5.18 and SO=16.20±1.70) and large follicles (≥ 6.00mm) (MN=0.90±0.58, SI=1.10±0.48 and SO=0.10±0.10) did not differ among breeds. The number of CL on Day 15 was greater ($P<0.0001$) in SI (15.30±1.40) compared to MN (7.83±2.23) and SO (10.11±0.84). And, the variables on Day 15: numbers of recovered structures (MN=7.60±2.25, SI=13.33±5.33 and SO=6.13±1.27) and viable embryos (MN=6.60±2.71, SI=10.78±5.14 and SO=5.25±1.44) did not showed difference. In conclusion, the number of medium follicles on Day 11 and the number of Cls showed to influence of the breed effect; however, the viable embryos not altered among breeds. Financial support: Embrapa (02.13.06.026.00.02; 02.13.06.026.00.04); FAPEMIG (PPM 00201-17).