

EFFECT OF REPEATED SUPEROVULATION TREATMENT ON ESTRUS, OVULATION RATE AND EMBRYO PRODUCTION IN SANTA INES EWES

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The Santa Ines sheep is an important source of food in Northeast Brazil and an embryo transfer program could be a useful tool for the genetic improvement of this breed by increasing the number of offspring produced by each superior female. In sheep, the embryo transfer shows some aspects to be improved, as superovulation and embryo recovery. Concerning the embryo recovery, exteriorization of the reproductive tract often leads to post-operative adhesions after repeated surgery (Torres S and Sevellec C, *Reprod Nutr Dev* 1987; 27:233-236). The purpose of this study was to assess the embryo production after two successive superovulatory treatments using pFSH and embryo recovery by laparotomy. Fifteen adult Santa Ines ewes were used in this experiment. The estrus synchronization treatment was performed using intravaginal sponges impregnated with 60 mg of medroxyprogesterone acetate during 14 days. The superovulation was performed at day 12, 13 and 14 of treatment (day 0 = sponge insertion) using a total dose of 200 iu pFSH, divided in six decreasing doses (im) at each 12 h. Estrus was observed at 12 h intervals from 12 h after sponge removal. The ewes were naturally mated by two Santa Ines rams using hand mating. Six to seven days after estrus, the embryo recovery was performed using the surgical method (laparotomy). The recovery structures were evaluated in stereomicroscope ($\times 20-40$). All phases of experiment were repeated 90 days after the first treatment. ANOVA and Chi-square test were used to compare means and percentages, respectively. No significant difference was observed between treatments for any studied parameters. All the females showed estrus (15/15) in both treatments. The interval sponge removal to estrus onset was 36.0 ± 11.1 vs 44.0 ± 14.8 h and the estrus length was 43.2 ± 14.2 vs 44.0 ± 19.1 h, for the first and second treatment, respectively. Concerning the response to the superovulatory treatment, 73.3% (11/15) vs 60% (9/15) showed ovulatory response higher than three ovulations, for first and second treatment, respectively. These females showed a mean ovulation rate of 9.9 ± 3.6 and 7.5 ± 6.6 corpora lutea for the first and second treatment, respectively. The recovery rate was 79.8% in the first and 80.4% in the second treatment (87 vs 82 structures) with a mean of 7.9 ± 3.7 vs 9.1 ± 7.1 recovered structures, respectively. From the recovered structures, the fertilization rate was 52.9% (46/87) vs 40.2% (33/82) for the first and second treatment, respectively. The mean number of recovered embryos was 4.2 ± 3.4 , for the first- and 4.1 ± 3.8 , for the second treatment. These data show that two successive superovulation treatments with pFSH did not change the response of Santa Ines ewes. In addition, the embryo recovery method did not reduce the number of produced embryos.