



## Superovulation of Morada Nova Ewes with protocols diverging only progesterone duration regimen

*Superovulação de ovelhas Morada Nova com protocolos divergentes apenas do regime de duração da progesterona*

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Despite the importance of Morada Nova for Northeast sheep production systems, information about embryo production of this breed is scarce with only one report of multiple ovulation and surgical embryo recovery (Brasil et al., 2016. *ArqBrasMedVetZootec*, 68:1390-1394) and non-surgical uterine access (Fonseca et al., 2016. *Theriogenology*, 86:144-151). In this context, the objective of this study was to evaluate the efficiency of different superovulation protocols in pluriparous Morada Nova using non-surgical embryo recovery (NSER) to access embryo production. A total of 18 ewes were equally assigned to three treatments group with 6 (T6, n=6), 9 (T9, n=6) and 12 (T12, n=6) days of 60 mg MAP intravaginal sponges (Progespon<sup>®</sup>, Zoetis, Campinas, São Paulo, Brazil) permanence. Sponges were inserted and removed at 7:00 p.m. Sixty hours before sponge removal, all ewes started to receive six decreasing doses (25-25-15-15-10-10%), at intervals of 12 (07:00 a.m and 7:00 p.m.) of 133 mg of pFSH (Folltropin<sup>®</sup>, Vetoquinol, Mairiporã - São Paulo, Brazil). Ewes also received 37.5 µg of d-cloprostenol (Prolise<sup>®</sup>, ARSA SRL, Buenos Aires, Argentina) together with 5<sup>th</sup> and 6<sup>th</sup> FSH dose. Estrus was checked twice a day (every 12 h) for three days and mated while in estrus with, four rams of proven fertility. Corpora lutea were counted through transrectal ultrasonography in B mode and Doppler (7.5 MHz linear transducer; M5 Vet<sup>®</sup>, Mindray, Shenzhen, China) one day before NSER. Ewes received 37.5 µg of d-cloprostenol and 1 mg of estradiol benzoate (Sincrodiol<sup>®</sup>, OuroFino, Cravinhos, Brazil) i.m. 16 h and 50 IU oxytocin (Ocitocina Forte<sup>®</sup>, UBCVet, São Paulo, Brazil) i.v. 20 min prior to NSER (6.5 days after estrus onset). Qualitative data were analyzed by exact Fisher test and the quantitative data were sequenced by the multiple-media-test, Kruskal-Wallis test at 5% significance. All protocols showed similar efficiency (P>0.05). Seventeen sheep (17/18) responded to estrus, with an average onset of 21.88 h ±1.7 and duration of 41.64 h±2.9h. Successful NSER was done in 94.1% (16/17). The number of corpora lutea (7.8±2.8, 11.8±1.4 and 11.3±2.0), recovered structures (3.5±1.5, 8.0±2.7 and 6.8±2.0) and the viable embryos (2.5±1.4, 4.8±1.9 and 4.8±2.2) were similar (P>0.05) for T6, T9 and T12, respectively. The NSER mean duration was 30.8±2.6 min, with recovery of 99.1% of injected fluid and embryo recovery rate of 60.5% (95/157). These preliminary results showed that different duration progesterone regimes support good superovulatory answer, viable embryo production from T9 and T12 reached the average world reported answer for sheep (five viable embryos for donor collected) and that NSER can be successfully applied in Morada Nova ewes.

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**Keywords:** superovulation, progesterone, embryo transfer, small ruminant.

**Palavra-chave:** superovulação, progesterona, transferência de embriões, pequenos ruminantes.