

## **Different times of exogenous progesterone exposure associated or not with GnRH agonist on embryo production in ewes**

Oscar O. Brasil<sup>1</sup>, Nathalia H. Moreira<sup>1</sup>, Gilberto Santos Jr.<sup>1</sup> Bianca D. M. Silva<sup>2</sup>, Alexandre F. Ramos \*<sup>2</sup>

\* Embrapa Genetic Resources and Biotechnology, Parque Estação Biológica, Av W5 Norte final, Asa Norte, 70770-917, Brasília, DF. <sup>1</sup>Programa de Pós-Graduação em Ciência Animal, UNB, Brasília, DF; <sup>2</sup>Embrapa Genetic Resources and Biotechnology, Brasília, DF  
\* alexandre.floriani@embrapa.br

This study aimed to evaluate the effect of exogenous progesterone time exposure during superstimulation, with or without the addition of GnRH agonist on embryo yields in Santa Inês ewes. Forty-eight embryo donors were synchronized with intravaginal progesterone device (CIDR). The animals were randomly divided into three groups: exposed to progesterone for 14 days (Control, n = 14); extended 12 hours of progesterone exposure (G12hP4, n = 21); and extended 12 hours associated with an administration of 25 µg of Lecirelin (G12hP4GnRH, n = 13). For superstimulation, 133 mg of pFSH in decreasing doses were administered in eight applications. Estrus was detected with the aid of thugs after CIDR removal and inseminations were performed 36 and 48 hours after device removal, using frozen/thawed semen (100x10<sup>6</sup> spz/dose). Five days after the first insemination the number of corpora lutea (CL) was assessed by laparoscopy and the embryos were collected by prepubic laparotomy. The number of oestrus ewes and time of onset of estrus after device removal was similar between groups (P>0.05). All groups had a high superstimulatory response (averages ranging from 14.33 to 16.18 follicles ≥ 4 mm) (P>0.05). The number of CL was high in all groups (averages ranging from 11 to 12.00) (P>0.05). The fertilization rate was significantly higher in the G12hP4GnRH compared to the Control and G12hP4 (77%, 34% and 41% respectively). The longer exposure to progesterone reduced degenerated embryo proportion (Control = 30%; G12hP4 = 7% and G12hP4GnRH = 10%). The association of increased progesterone exposure and GnRH administration reduces embryonic degeneration, increases oocytes fertilization rate and it may be adopted at MOET programs.

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