Effect of superovulation protocol on quality and embryonic stage in Moxotó and Canindé goats

Efeito do protocolo de superovulação sobre a qualidade e estádio de desenvolvimento embrionário em cabras Moxotó e Canindé

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For the success of an embryo transfer program, it is necessary to achieve a great synchronization between the embryo donor and recipients. For this, hormonal protocols are commonly used, aiming at a greater number and quality of the viable products, in a shorter period of time. The aim of this study was to assess the effect of the hormonal protocol of estrus synchronization and superovulation in goats on the quality and stage of embryos obtained. In September of 2018, 15 Canindé (CA) and 15 Moxotó (MO) goats received intravaginal sponges containing 60 mg medroxyprogesterone acetate (Progespon®, Syntex S.A., Buenos Aires, Argentina) for six days and 37.5 µg d-cloprostenol (Prolise®, Tecnopec, São Paulo, Brazil) in the first day. Superovulation was initiated 60 h before device removal with six decreasing doses of 133 mg p-FSH (Folltropin V®, Vetoquinol, Brazil) i.m. every 12 h. Females were monitored and naturally mated with fertile bucks. Goats also received three doses (12/12 h) of 25 µg of flunixin meglumine (Banamine®, Merck, Summit, USA) 60 h after device removal and 37.5 µg d-cloprostenol (Prolise®) 12 h before embryo collection. Embryo collection was performed seven days after the first natural mating by transcervical technique (Fonseca et al. 2013. Small Rumin Res, 111:96-99) and embryos were classified according to their morphology in different stages and quality [Grade I (GI), Grade II (GII) and Grade III (GIII)] according to IETS criteria. Ten of the 30 goats did not show estrus and were not collected, so a total of 112 viable structures was collected from 20 goats (8 CA = 34; and 12 MO = 78). For CA goats 53% of compact morulae (29% GI and 24% GII), 9% of GI initial blastocyst, 26% of GI blastocyst and 12% of GI expanded blastocyst were obtained. For MO goats, 6% of GI morulae, 41% of compact morulae (28% GI and 13% GII), 10% of GI initial blastocyst, 37% of blastocyst (32% GI and 5% GII), 3% of GI expanded blastocyst and 3% of eight to sixteen cell embryos were obtained. No hatched blastocyst was recorded in any breed. In conclusion, the hormonal protocol used for superovulation of goats was effective enough to guarantee embryos in adequate stages and quality for fresh embryo transfer and cryopreservation, avoiding both undesired very young and hatched embryos.
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Keywords: goat superovulation, *in vivo* embryo production, embryonic development stage.
***Palavras-chave**: superovulação, produção in vivo de embriões, estágios de desenvolvimento embrionário, caprinos.*