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Intravaginal hCG administration increases pregnancy rate in artificially inseminated cyclic dairy goats subjected to estrous synchronization

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Pregnancy establishing after artificial insemination (AI) in goats depends on many important aspects, including time of AI, ovulation and premature luteal regression. The knowledge of ovulation in relation to estrus onset, ovulation induction and strategies to prevent PLR can be valuable tools to increase pregnancy rate. This study tested the effect of hCG administration on pregnancy rate in artificially inseminated dairy cyclic goats after estrus synchronization. A total of 315 dairy goats received two doses of 30 µg d-cloprostenol (Prolise[®]; ARSA S.R.L., Buenos Aires, Argentina) latero-vulvar 7 (n=115) or 11.5 (n=200) days apart in five (1 to 5) different farms. In farms 1 and 2, goats received 7 days protocol; 3 and 4 received 11.5 days protocol; and farm 5 both protocols. Goats were checked for estrus twice daily and only those in estrus up to 72 h after the second d-cloprostenol administration were artificially inseminated with frozen-thawed commercial semen, in standing position (Fonseca et al., Biol Reprod., 17:268-273, 2017). After second cloprostenol administration, goats in estrus at 24 to 48 h, 60 and 72 h were artificially inseminated at 24, 18 and 10 hours after estrus onset 7 days protocol, while for 11.5 days protocol, goats in estrus at 24 to 36 h, 48 and 60 h were artificially inseminated at 24, 18 and 10 hours after estrus onset, respectively as proposed (Maia et al., Anim. Reprod. Sci., 181:16-23, 2017). Immediately after AI, goats were alternately allocated according to estrus synchronization protocol to received either 300 IU hCG (Vetecor[®] 5000; Hertape Calier, São Paulo, Brazil) (n=143) or not (n=147). hCG was diluted in a 0.3 mL saline solution and deposited into the vagina with the aid of a sterile insulin syringe without needle. Pregnancy rate was checked 60 days after AI by transrectal ultrasonography. Qualitative variables were analyzed by chi-square test at 5% significance. Protocols of 7 and 11.5 days apart resulted in overall pregnancy rate of 62.8% (66/105) and 80.0% (148/185), respectively. In Farm 5, pregnancy rate for 7 and 11.5 days protocols was 85.2 (23/27) 93.6 (29/31), respectively (P>0.05). A total of 67.3% (99/147) and 80.4% (115/143) of artificially inseminated goats became pregnant for Control and hCG treated groups, respectively (P<0.05). Results of this study showed that hCG administration associated to AI significantly increased pregnancy rates in goats after estrus synchronization with d-cloprostenol, which can be a valuable and promising tool to be applied in field conditions.

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