



Estrus and fertility of anestrus Anglo-Nubian goats submitted to different synchronous protocols and given hCG five days after artificial insemination

Estro e fertilidade de cabras Anglo-Nubianas em anestro estacional submetidas a diferentes protocolos de indução de estro sincronizado e administração de hCG cinco dias após a inseminação artificial

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Introduction

A great variation in the duration of protocols and in the moment of hormone administration respective to device introduction or removal has been reported to induce estrus in goats. In addition, hCG administration five days after breeding has been shown to have beneficial effects on goat fertility (Fonseca et al. 2005). The objective of this study was to check the efficiency of estrous induction with 6, 9 and 12 days progestagen protocols and hCG administration five days after timed artificial insemination (TAI) on fertility in anestrus Anglo-Nubian goats.

Materials and Methods

This study was done in September (non-breeding season) of 2008 in Espírito Santo do Pinhal – SP, Brazil. Nulliparous and pluriparous Anglo-Nubian goats were randomly assigned into three treatments according to time of progestagen exposure: 6 (n=20), 9 (n=21) and 12 days (n=20). All goats received (Day 0) MAP 60 mg intravaginal sponges (Progespon[®], Schering Plough Animal Health, São Paulo, Brasil) and 50 mg d-cloprostenol (Ciosin[®], Schering Plough Animal Health) i.m. plus 200 IU eCG (Novormon 5000[®], Schering Plough Animal Health) i.m 24 hours before sponge removal. Estrus was monitored twice daily (06:00 and 18:00 h) for 48 h after sponge removal. Goats in estrus were artificially inseminated at fixed time and randomly assigned to receive 250 IU hCG (Vetecor[®], Hertape-Calier do Brasil, São Paulo, Brasil) or not (Control). Statistical analysis was performed using all tests at the 95% confidence interval.

Results and Discussion

There was no difference (P>0.05) among protocols on estrous parameters or fertility of the goats (Table 1).

Table 1. Effects of time of exposure to progestagen and hCG administration five days after timed artificial insemination (TAI) on estrus and fertility in anestrus Anglo-Nubian goats

Parameter	6 days	9 days	12 days	Total	
Estrous response (%)	80.0 (16/20)	76.2 (16/21)	80.0 (16/20)	78.7 (48/61)	
Interval to estrus (h)	33.7 ± 10.9	29.2 ± 8.7	30.7 ± 9.8	31.2 ± 9.8	
Interval (h) to AI after estrous onset	17.5 ± 11.2	22.1 ± 8.3	20.3 ± 9.5	20.0 ± 9.7	
after sponge removal	51.2 ± 1.1	51.3 ± 1.1	51.1 ± 1.0	51.2 ± 1.1	
Pregnancy (%)	Control	44.4 (4/9)	50.0 (3/6)	25.0 (2/8)	37.5 (9/24)
	hCG	57.1 (4/7)	50.0 (5/10)	50.0 (4/8)	52.0 (13/25)
	Total	50.0 (8/16)	50.0 (8/16)	35.3 (6/16)	44.9 (22/49)

Only animals with estrus up to 48 h after sponge removal were considered, which explain the low estrous response in the present study. Animals in estrus after 48 h were not considered because they were not adequate to TAI. Time of exposure to progestagen did not affect the efficiency of estrous induction and fertility in goats. Future studies should consider administration of hCG for increasing fertility after TAI in goats.

References

Fonseca JF, Torres CAA, Costa EP, Maffili VV, Carvalho GR, Alves NG, Rubert MA. 2005. Progesterone profile and reproductive performance of estrous-induced Alpine goats given hCG five days after breeding. *Anim Reprod*, 2 (1):54-59.

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Palavras-chave: indução de estro, inseminação artificial, hCG, fertilidade, caprino.