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23 INDUCTION OF ESTRUS IN CYCLIC ALPINE GOATS WITH SHORT-TERM PROGESTAGEN PROTOCOLS WITH OR WITHOUT eCG ADMINISTRATION

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Abstract

Depending on the season, estrus can be efficiently induced using male effect, melatonin implants, light controlled programs, prostaglandin, progestagens, and gonadotrophins. The eCG is the most used hormone employed in estrus induction protocols in goats. However, as eCG is a foreign protein, a humoral immune response (i.e. antibody formation) is displayed in goats, which tends to reduce the efficiency of eCG when successively administered. The objective of this study was to evaluate the possibility of omitting the administration of eCG to induce estrus in Alpine goats during the breeding season in herds submitted to successive hormonal estrus induction. This study was done in April (local breeding season) of 2009 in Florestal/MG, Brazil. Nulliparous (n = 10) and pluriparous (n = 10) Alpine goats were equally assigned to receive (Day 0) MAP 60 mg intravaginal sponges (Progespon®, Schering Plough Animal Health, São Paulo, Brazil) for 6 days and 50 μg D-cloprostenol (Ciosin®, Schering Plough Animal Health) i.m. with (T1) or without (T2) 200 IU of eCG (Novormon 5000®, Schering Plough Animal Health) i.m. 24 h before sponge removal. Transrectal ultrasound (5 MHz probe, Aloka SSD 500®, Tokyo, Japan) was done at 12-h intervals until 72 h after sponge removal. All goats underwent timed AI 55 h after sponge removal according to expected ovulation (Menchaca *et al.* 2007 Anim. Reprod. Sci. **102**, 76-87). Statistical analysis was performed using all tests at the 95% confidence interval (SAEG® program, Funarbe, Viçosa, Brasil). Data are reported as percentage or mean ± SD. The following results for T1 or T2 animals (respectively) were observed: estrus response (80 and 80%), goats ovulating (80 and 100%), interval from sponge removal to estrus onset (46.0 ± 17.0 and 53.5 ± 18.1 h) and to ovulation (58.8 ± 6.2 and 66.0 ± 9.8 h), interval from estrus onset to ovulation (26.0 ± 8.5 and 26.0 ± 0.7 h), diameter of ovulatory follicles (7.1 ± 0.6 and 7.4 ± 0.9 mm), number of ovulations (1.7 ± 0.8 and 1.8 ± 0.9 h), intervals from sponge removal to insemination (56.9 ± 2.3 and 58.2 ± 1.2 h) and from estrus onset to insemination (10.9 ± 14.5 and 4.6 ± 16.1h) and pregnancy rate (20 and 40%). Eight goats were inseminated at 17 to 23 h after estrus onset, which resulted in 50% pregnancy rate, and the other 2 pregnant goats were inseminated without being detected in estrus. In Brazil, dairy goats are inseminated with frozen-thawed semen 12 to 24 h after estrus onset or 42 to 55 h after sponge removal. Thus, for Alpine goats, this study suggests that earlier AI time should be avoided. However, under heat detection, AI at 18 to 24 h can be indicated. Ovarian ultrasonography of goats submitted to estrus induction gives great information of ovulation time relative to device removal and to estrus onset, which can optimize AI efficiency. In herds with successive estrus induction this kind of information could indicate an error in the common times currently used in AI programs in goats in Brazil.

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4960
P. 155

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Table of Contents

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