Comparison of the effect of cronolone sponges and PMSG or cloprostenol on estrous induction in Turkish Saanen goats

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Abstract

The efficiency of cronolone sponges in combination with either pregnant mare serum gonadotrophin (PMSG) or cloprostenol (PGF₂α) for inducing and synchronizing the estrous cycle in Turkish Saanen does was investigated during the transition from non-breeding to breeding season. All does (n=80) were treated with 20 mg cronolone sponges for 11 days and divided into 4 equal groups. In addition, each doe received an intramuscular injection of either 1.5 ml sterile saline solution, 0.075 mg PGF₂α, 500 IU PMSG or 500 IU PMSG and 0.075 mg PGF₂α, 24 h before the sponge removal. Cervical artificial insemination (AI) with frozen-thawed semen was performed once 16 h after the detection of the first accepted mount. The total estrous response for the first 24 ± 4 h, total estrous response within 96 h, time to onset of the induced estrus, duration of the induced estrus and pregnancy rate was found to be 75.0%, 97.5%, 31.4 ± 1.2 h, 29.3 ± 1.2 h, and 33.3%, respectively. There were significant differences between the first two groups and the last two groups in terms of the onset of induced estrus and estrous response at the first 24 ± 4 h (P<0.05). These results indicate that the use of cronolone/PMSG was more effective than cronolone/PGF₂α in the attainment of early and compact induction of estrus in Turkish Saanen does.

Keywords: Turkish Saanen goat, cronolone, cloprostenol, PMSG, transition period

Introduction

Reproduction activity in the majority of goat breeds affects the annual change in day length (Chemineau et al. 1992). During a year, reproductive activity in goats is composed of non-breeding season, transition period and breeding season (Pierson et al. 2001). Therefore, synchronization and induction of estrus in goats allows AI and reproduction management at any time of the year, in consequence founding continuous availability of products such as milk and meat (Leboeuf et al. 1998, 2000). Controlled breeding of goats involves artificial control of estrus and ovulation with exogenous hormone treatments (Whitley and Jackson 2004). The most widely used methods for synchronization and/or induction of estrus and ovula-