



Plasma progesterone concentrations in Toggenburg goats submitted to estrous synchronization reusing autoclaved intravaginal progesterone devices

Concentrações de progesterona plasmática em cabras da raça Toggenburg submetidas à sincronização de estro reutilizando dispositivos intravaginais de progesterona autoclavados

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Introduction

Intravaginal devices containing progesterone (P4) are used worldwide for estrous induction in goats. As protocols for estrous induction shortened the time of exposure to P4, devices were able to be reused until three times to induce estrus (Zambrini et al., 2005). However, even with a good cleaning, there is no total warranty that all microorganisms are eliminated. Thus, sanitary risks are associated with device reuse. The aim of this study was to evaluate plasma P4 concentration in Toggenburg goats receiving autoclaved progesterone devices for estrous synchronization.

Materials and Methods

This study was conducted in the breeding season (March) at the City of Piau-MG, Brazil (latitude 21°35' S and longitude 43°15' W). Nulliparous (n = 12) and pluriparous (n = 15) goats were equally assigned according to weight and body condition score into 3 treatments: females received new intravaginal devices (n = 9) containing 0.33 g of P4 (CIDR-G[®]), autoclaved devices (121°C, 1 atm, 15 min) used previously during 6 days (n = 9) or 12 days (n = 9). Additionally, 5 mg dinoprost (Lutalyse[®]) on the day of device insertion and 200 IU eCG (Novormon 5000[®]) 24 h before its removal were done in both latero-vulvar. In all does, devices were removed after 6 d. Blood collection was performed to determine the plasma P4 concentration using a commercial kit (Coat-a-Count[®]) of solid phase radioimmunoassay on different moments: 7 days before device insertion (Day -7), at the insertion (Day 0), 6 and 12 h after and daily from the first to the ninth day. Statistical analysis was tested for statistical significance at the 95% confidence interval.

Results and Discussion

From the 27 goats, 23 (85.2%) had P4 \geq 1 ng/mL on Day -7 and/or Day 0, indicating that most of all goats were cyclic. The other 4 goats had a P4 increase after device insertion. No differences were detected among all treatments during the 6 days devices were inserted (P>0.05). All goats had at the moment of device removal P4 \geq 1 ng/mL. On the following day, P4 concentrations decreased to subluteal levels in 17 goats whereas 10 goats remained with elevated P4. All 17 goats showed estrus after device removal and the other 10 did not. There was no category effect (P>0.05) between nulliparous or lactating goats regarding the P4 concentrations. Progesterone analysis allows us to infer that the autoclaving process does not influence progesterone availability and so this technique can be a simple and valuable tool to reduce sanitary risks of disease transmission without altering fertility in goats.

References

Zambrini FN, Fonseca JF, Bruschi JH, Viana JHM, Palhão MP, Santos AFA. Induction estrus in goats using reused intravaginal devices. *Acta Sci Vet*, 33, suppl. 1, 2005.

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