



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, Brazil). Data are reported as percentage or mean \pm 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 ± 16.1 h) 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.

Financial support: Embrapa Goats and Sheep, CNPq and FAPEMIG.

Reproduction, Fertility and Development 22(1) 169–169 doi:10.1071/RDv22n1Ab23
 Published: 08 December 2009

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Table of Contents



Reproduction, Fertility and Development

Volume 22 Number 1 2010

Proceedings of the Annual Conference of the International Embryo Transfer Society, Córdoba, Argentina, 9–12 January 2010

Full Papers and Abstracts for Poster Presentation

IETS 2010 author index

pp. 383-393
[PDF \(112 KB\)](#)

IETS 2010 abstracts

pp. 159-381
[PDF \(3.5 MB\)](#)

Recipient of the 2010 IETS Pioneer Award: Reuben John Mapletoft, DVM, MSc, PhD

pp. xxxv-xxxviii
[PDF \(185 KB\)](#)

Coordinated regulation of follicle development by germ and somatic cells

Mario Binelli and Bruce D. Murphy
pp. 1-12
[Abstract](#) | [Full Text](#) | [PDF \(1.3 MB\)](#)

Mammalian oocyte development: checkpoints for competence

Trudee Fair
pp. 13-20
[Abstract](#) | [Full Text](#) | [PDF \(208 KB\)](#)

Is the zona pellucida an efficient barrier to viral infection?

A. Van Soom, A. E. Wrathall, A. Herrier and H. J. Nauwynck
pp. 21-31
[Abstract](#) | [Full Text](#) | [PDF \(525 KB\)](#)

Towards the use of microfluidics for individual embryo culture

R. L. Krisher and M. B. Wheeler
pp. 32-39
[Abstract](#) | [Full Text](#) | [PDF \(341 KB\)](#)

Challenge testing of gametes to enhance their viability

Henrik Callesen
pp. 40-46
[Abstract](#) | [Full Text](#) | [PDF \(169 KB\)](#)

Applications of RNA interference-based gene silencing in animal agriculture

Charles R. Long, Kimberly J. Tessanne and Michael C. Golding
pp. 47-58
[Abstract](#) | [Full Text](#) | [PDF \(244 KB\)](#)

Effects of gamete source and culture conditions on the competence of *in vitro*-produced embryos for post-transfer survival in cattle

Peter J. Hansen, Jeremy Block, Barbara Loureiro, Luciano Bonilla and Katherine E. M. Hendricks
pp. 59-66
[Abstract](#) | [Full Text](#) | [PDF \(270 KB\)](#)

Bovine embryo transfer recipient synchronisation and management in tropical environments

Pietro S. Baruselli, Roberta M. Ferreira, Manoel F. Sá Filho, Luiz F. T. Nasser, Carlos A. Rodrigues and Gabriel A. Bó
pp. 67-74
[Abstract](#) | [Full Text](#) | [PDF \(305 KB\)](#)

Pregnancy recognition and abnormal offspring syndrome in cattle

C. E. Farin, W. T. Farmer and P. W. Farin
pp. 75-87
[Abstract](#) | [Full Text](#) | [PDF \(286 KB\)](#)

Delivery of cloned offspring: experience in Zebu cattle (*Bos indicus*)

Flávio V. Meirelles, Eduardo H. Birgel, Felipe Perecin, Marcelo Bertolini, Anneliese S. Traldi, José Rodrigo V. Pimentel, Eliza R. Kominou, Juliano R. Sangalli, Paulo Fantinato Neto, Mariana Tikuma Nunes, Fábio Celidonio Pogliani, Flávia D. P. Meirelles, Flávia S. Kubrusly, Camila I. Vannucchi and Liege C. G. Silva

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