

ABSTRACTS: 34TH ANNUAL MEETING OF THE BRAZILIAN EMBRYO TECHNOLOGY SOCIETY (SBTE)

AI and IATF

Association of controlled light program, cloprostenol and gonadotropins for synchronous estrus induction and fixed time artificial insemination in dairy goats during the non-breeding season: preliminary results**Maria Clara Cruz Morais¹, Aline Matos Arrais², Nathália Cristina Silva³, Maria Emilia Franco Oliveira⁴, Joanna Maria Gonçalves Souza-Fabjan¹, Jeferson Ferreira da Fonseca⁵**

¹UFF - Universidade Federal Fluminense (Av. Alm. Ary Parreiras, 507 - Icaraí, Niterói - RJ, 24220-000); ²UFRRJ - Universidade Federal Rural do Rio de Janeiro (Rodovia BR 465, Km 07, s/n Zona Rural, Seropédica - RJ, 23890-000); ³Unipac - Universidade Presidente Antônio Carlos (Av. Juiz de Fora - Recanto dos Lagos, Juiz de Fora - MG, 36047-362); ⁴UNESP - Universidade Estadual Paulista (Rua Prof. R. Dr. Valter Maurício Corrêa, s/n, Botucatu - SP, 18618-681); ⁵Embrapa Caprinos e Ovinos - Empresa Brasileira de Pesquisa Agropecuária (Estrada Sobral - Groaíras, s/n - Zona Rural, Sobral - CE, 62010-970).

Animal preparation prior to artificial insemination (AI) in goats usually involves a combination of intravaginal devices containing progesterone/progestagens plus PGF₂- α analogues and gonadotropins, being eCG the most used. The use of intravaginal devices soaked in synthetic progesterone analogues requires milk discard for 60 days. Progesterone soaked intravaginal devices, as synthetic ones, are associated with more animal handling and discomfort. In addition, it leads to environmental impacts because it generates more residues. On the other hand, eCG has presented continuous restriction due to animal welfare issues associated with its production (Vilanova et al., *Animals*, 9:1053, 2019) and it has been substituted by hCG for this purpose. This study tested the efficiency of estrus induction by light program followed by estrus synchronization protocol with two doses of cloprostenol 7.5 days apart and gonadotropins to provide suitable condition able to support fixed time AI (FTAI) during the non-breeding season in dairy goats. Goats (n=18) were subjected to controlled light program using 16 h light and 8 h darkness during 60 days from June 30 (Day-0) to August 29. At Day-130 (6 am) and 137.5 (6 pm), goats received i.m. 37.5 μ g d-cloprostenol (Prolise[®], Syntex, Buenos Aires, Argentina) plus 250 IU hCG (Vetecor[®] 5000; Hertape Calier, São Paulo, Brazil) at second cloprostenol dose. Embrapa AI technique (Fonseca et al., *Reproductive Biology*, 17:268–273, 2017) with frozen-thawed semen was performed 63 to 64 h after second cloprostenol dose. Two goats whose mucus was considered inadequate were not inseminated. Immediately after AI, goats received alternatively 50 μ g of gonadorelin (Gestran[®], Tecnopec, São Paulo, Brazil) injected into the vagina with insulin syringe without needle (GnRH, n=8) or nothing (control, n=8). After 60 days of AI, pregnancy was checked by transrectal ultrasonography. Non-parametric data was evaluated by Fisher Exact Test with 5% minimal level significance. Pregnancy rate was similar (P>0.05) to GnRH treated (37.5% or 3/8) or not treated goats (75.0% or 6/8). One goat from GnRH group showed embryonic loss followed by hydrometra. Overall pregnancy rate was 56.2%. The results of this study showed the possibility of using a more natural form to induce asynchronous estrus during the non-breeding season (light program), associated with an estrus synchronization protocol using only cloprostenol and hCG as gonadotropins. It was possible to provide synchronous estrus conditions able to support FTAI in goats during the non-breeding season, resulting in good pregnancy rates. The use of GnRH analogues at AI time did not result in additional pregnancies. Financial Support: CNPQ (Project 314952/2018-7), Fapemig (Project CVZ-PPM 00201-17) and EMBRAPA (Project 20.19.01.004.00.03.001).