



A103 OPU-IVP and ET

### Metabolic profile and *in vitro* embryo production of primiparous canchim cows kept in areas of intensive grazing or silvipastoral

A.P. Lemes<sup>1,2</sup>, A.R. Garcia<sup>2</sup>, Y.F. Watanabe<sup>3</sup>, M.O. Chiba<sup>3</sup>, A.C. Camplesi<sup>1</sup>, R.F. Cooke<sup>5</sup>,  
A.P. Brandão<sup>6</sup>, R.S. Marques<sup>6</sup>, C.C.P. Paz<sup>4</sup>, L.U. Gimenes<sup>1</sup>

<sup>1</sup>FCAV/Unesp - Universidade Estadual Paulista "Júlio de Mesquita Filho", Jaboticabal, SP, Brasil; <sup>2</sup>CPPSE - Embrapa Pecuária Sudeste, São Carlos, SP, Brasil; <sup>3</sup>Vitrogen Cravinhos, Cravinhos, SP, Brasil; <sup>4</sup>IZ - Instituto de Zootecnia de Sertãozinho, Sertãozinho, SP, Brasil; <sup>5</sup>Texas A&M University, TX, USA; <sup>6</sup>OSU - Oregon State University, Corvallis, OR, EUA.

In regions with a tropical climate, shading may determine greater animal comfort (Garcia et al, 2011), impacting on productivity. Thus, the aim was to study the influence of the silvipastoral system on the metabolic profile and the *in vitro* embryo production of primiparous Canchim cows. We used 18 donors, with  $477.0 \pm 12.0$  kg of body weight and  $26.2 \pm 2.2$  days postpartum, at the beginning of the experiment. The females were managed in two grazing systems: 1) with trees (n = 10; Silvipastoral-SP, eucalyptus trees at 15x2m spacing); 2) without trees (n = 8; Intensive Rotation-IR). The experiment was carried out at Embrapa Livestock Southeast, in São Carlos, SP, Brazil, from January to May 2017. The following procedures were performed monthly: black globe humidity index (BGHI) and heat load index (HLI) (P4),  $\beta$ -hydroxy butyrate (BHBA), glucose (GLU), non-esterified fatty acids (NEFA) and follicular aspiration (OPU). After counting the follicles observed in OPU (OF), the recovery rate (RR) was calculated. Cumulus oocyte (COC) complexes evaluated with degrees I to III were matured and used in PIVE, performed with semen of the same bull, of known fertility. The total number of oocytes (TO), number of viable oocytes (VO), D3 cleavage rate (CA), blastocyst rate in D7 (number of embryos / number of viable oocytes, BR). The discrete variables were analyzed by PROC GENMOD, while the continuous variables were PROC MIXED. The results were presented as mean  $\pm$  SEM. BGHI and HLI were higher ( $P < 0.01$ ) in RI ( $83.2 \pm 0.7$  and  $694.2 \pm 11.3$ ) than in SP ( $81.2 \pm 0.7$  and  $610 \pm 8, 9$ ). Cows grazing in IR had a higher concentration of P4 than those in SP  $1.4 \pm 0.4$  and  $1.1 \pm 0.2$ , respectively;  $P = 0.02$ ), but the system did not influence the concentrations of NEFA ( $P = 0.65$ ), GLU ( $P = 0.31$ ) and BHBA ( $P = 0.09$ ) during the experimental period. The OF ( $P = 0.72$ ), RR ( $P = 0.73$ ), TO (SP: n=1043, RI: n=788,  $P = 0.27$ ), and VO ( $P = 0.97$ ) were not different between grazing areas. CR ( $85.9 \pm 2.6574/643$ ] vs  $82.8 \pm 1.4[400/470]$ , respectively,  $P = 0.04$ ) and BR ( $43.0 \pm 4.2[245/574]$  vs  $36.6 \pm 4.3[159/400]$ , respectively;  $P = 0.04$ ) was higher in cows in SP than in those in IR. It was evident in this study, the difference of the microclimate provided by the RI and SP areas. In this sense, the highest concentrations of P4 observed in cows in the IR area indicate a possible stress condition in this group of animals (Cooke et al, 2009). It was not observed, by the BHBA, NEFA and GLU dosages, a severe energy balance after calving, however considering the possible condition of thermal stress of the cows in IR, the embryo production was higher in the cows in SP.

Acknowledgments: Embrapa (Biotec Network, Pecu Network, Adapt +), Byoembryo and Vitrogen Laboratories, GS Animal Reproduction, FAPESP (#2015/26627-5), CAPES.