

EFFECTS OF THE PROLONGED SUPPLEMENTATION WITH POLYUNSATURATED FATTY ACIDS ON QUALITY OF FROZEN SPERM OF NELORE BULLS

EFEITOS NA QUALIDADE DA CINÉTICA ESPERMÁTICA NO SÊMEN CONGELADO DE TOUROS NELORE APÓS SUPLEMENTAÇÃO PROLONGADA COM ÁCIDOS GRAXOS POLIINSATURADOS.

NATÁLIA MARINS BASTOS^{1*} GUILHERME FAZAN ROSSI¹, NAIARA NANTES RODRIGUES¹,
ANIELLY DE PAULA FREITAS³, FÁBIO MORATO MONTEIRO², GISELE ZOCCAL MINGOTTI⁴, VERA
FERNANDA MARTINS_HOSSEPIAN DE LIMA¹

¹Faculdade de Ciências Agrárias e Veterinárias (FCAV – UNESP), Jaboticabal, SP, Brazil.

²Centro APTA Bovinos de Corte, Instituto de Zootecnia (IZ), Sertãozinho, SP, Brazil.

³Faculdade de Medicina de Ribeirão Preto (FMRP – USP), Ribeirão Preto, Sp, Brazil.

⁴Faculdade de Medicina Veterinária de Araçatuba (FMVA- UNESP), Araçatuba, SP, Brazil.

*e-mail: nataliamarinsbastos@yahoo.com.br

Lipids in the sperm plasma membrane can influence the success of cryopreservation. The aim of this study was to evaluate the frozen semen quality of Nelore bulls supplemented with polyunsaturated fatty acids (PUFAs). Semen samples of 12 Nelore bulls (521.4 kg ± 11.4 kg) with 24 months average age were used. Bulls were kept in pasture of *Brachiaria brizantha cv Marandu*, with protein mineral salt and water *ad libitum*, and were supplemented from 14 to 24 months of age according to the groups: group 1 (G1, n=6) supplemented with PUFAs (Megalac-E®) and group 2 (G2, n=6) had no PUFAs supplementation. At 24 months of age, semen collection was performed by electroejaculation. The semen was diluted in BotuBov® (7% glycerol) and loaded at room temperature into 0.5 mL straws (concentration 50 × 10⁶ spermatozoa/mL). For cooling and freezing curves (0.25 °C/min to 5 °C, equilibration time at 5 °C for 4 hours, and -20 °C/min), a programmable semen cryopreservation system (Tetakon, TK 4000) was used, and after freezing the straws were stored in liquid nitrogen (-196 °C). The straws were thawed in a water bath at 37 °C for 30 seconds and the post-thaw evaluations were performed by computer-assisted sperm analysis (CASA). The evaluated parameters were: total motility (MT; %), progressive motility (MP; %), rapid cells (RAP; %), average path velocity (VAP; µm/s), straight-line velocity (VSL; µm/s), curvilinear velocity (VCL; µm/s), amplitude of lateral head displacement (ALH; µm), beat cross frequency (BCF; Hz), straightness (STR; %) and linearity (LIN; %). For statistical analysis the UNIVARIATE procedure of SAS® was performed. No differences were observed for frozen sperm quality parameters between G1 and G2: MT (74.66 ± 3.04 vs. 76 ± 3.04, P = 0.76), MP (59.00 ± 0.57 vs. 60.16 ± 2.57, P = 0.75), RAP (75.75 ± 3.18 vs. 72.66 ± 3.18, P = 0.84), VAP (91.00 ± 3.92 vs. 90.20 ± 3.92, P = 0.88), VSL (75.25 ± 2.73 vs. 74.77 ± 2.73, P = 0.90), VCL (148.76 ± 7.40 vs. 147.64 ± 7.40, P = 0.91), ALH (5.90 ± 0.26 vs. 5.92 ± 0.26, P = 0.96), BCF (27.44 ± 0.84 vs. 29.58 ± 0.84, P = 0.08), STR (83.91 ± 0.92 vs. 84.16 ± 0.92, P = 0.85) and LIN (54.08 ± 1.10 vs. 54.08 ± 1.10, P = 1). The supplementation of bulls with PUFAs does not improve the quality of frozen semen evaluated by sperm kinetics parameters using CASA.

Keywords: *Cryopreservation, Megalac-E®, spermatozoa.*

Acknowledgments: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and Instituto de Zootecnia (IZ).