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A012 Male Reproductive Physiology and Semen Technology

Antioxidants on crioula breed ram semen cryopreservation

J. Pradieé, T.F. Cardoso, E.F. Silva, J.C. Lazzari, A.O. Gonçalves, R.G. Mondadori, L.M.C. Pegoraro, T. Lucia Jr

Universidade Federal de Pelotas, Pelotas, RS, Brasil.

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Antioxidants were used as an additive in ram semen cryopreservation to reduce oxidative stress. This biochemical unbalance is caused by the mitochondria production of reactive oxygen species and free radicals, which can cause damage in cell membrane, affecting parameter like progressive motility. The objective of this experiment was to evaluate the action of different B-mercaptoethanol (BME) concentrations (1mM, 5mM e 10mM) associated or not with 5 mM of cysteine, on Crioula breed ram semen cryopreservation. Rams (n=4) were collected seven times, twice a week, using artificial vagina. Immediately after they were collected, the semen was diluted 1:1 (v/v) with a base extender (tris, egg yolk and glycerol) in isothermal conditions. Using Neubauer chamber, the spermatic concentration was determined to allow equal contribution of each ram in the semen pool. After that, the semen was divided in the following experimental groups: (TC) control, 1mM BME (T1), 5mM BME (T2), 10mM BME (T3), 1mM BME+5mM cysteine (T4), 5mM BME+5mM cysteine (T5), 10mM BME+5mM cysteine (T6). Sperm motility, membrane and acrosome integrity were evaluated before and after cryopreservation. The concentration was adjusted for $100x10^6$ spermatozoa/0.25 mL straw. Data was analyzed by Statistics® (2009) software, no-parametric data with Kruskal-Wallis and parametric data with ANOVA. Membrane integrity was similar between the treatments. After thawing sperm motility presented differences between treatments T2 and T5, with 27.1% and 44.3%, respectively, but no treatments were different from control. For acrosome integrity after thawing, the treatments T2 (33.7%) and T3 (37.4%) were not different from control (33.7%), but the rates shown were higher than T1 (25.4%). These results suggested that in the concentrations used, the antioxidants were not beneficial for the parameters evaluated.