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ABSTRACTS

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STUDY THE RELATIONSHIP BETWEEN SPERM PARAMETERS AND THE ACTIVITY OF CREATINE KINASE IN THE PROCESS OF CRYOPRESERVATION

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The aim of the present study was to determine a possible relationship between sperm parameters and activity of creatinine kinase (CK) in the process of cryopreservation. To achieve this goal, 14 ejaculates of 7 rams of the breed Ile de France, aged 3-5 years, were examined. The rams were breeding under the same conditions of feeding, growing and sexual use. Ejaculates were obtained via the artificial vagina method and were diluted 1:12 with 6 A-G extender. The resulting ejaculates were examined by a computer assisted semen analysis (CASA) to determine total motility, velocity parameters, and morphological status. The intracellular and extracellular activity of CK were determined spectrophotometrically. After sperm evaluation, the ejaculates were frozen using Cassou sequin technology and the same parameters were analyzed after thawing the samples. From the obtained results we found a 26% decrease in sperm motility after thawing. The velocity parameters for VCL, VSL, VAP, AHL and BCF also decreased significantly after thawing ($P \leq 0.01$), but an increase was found in the linear velocity parameters - LIN, STR and WOB ($P \leq 0.01$). Cryopreservation also increased the percentage of abnormal sperm by 17%. A higher intracellular CK activity, which decreased significantly after freeze-thawing ($P \leq 0.001$) was measured. In conclusion, cryopreservation decreased sperm motility and increased the percentage of abnormal sperm (mostly with tail damage), but we did not establish a relationship between linear the velocity parameters LIN, STR and WOB, sperm morphological status and CK activity. Therefore, CK activity cannot serve as an indicator of sperm quality in the process of cryopreservation.

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