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Crude Glycerol Affects Canine Spermatoa Motility: Computer Assister Semen Analysis in Vitro

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Abstract : Target of this study was the analysis of the impact of crude glycerol on canine spermatozoa motility, morphology, viability, and membrane integrity. Experiments were realized in vitro. In the study, semen from 5 large dog breeds was used. They were typical representatives of large breeds, coming from healthy rearing, regularly vaccinated and integrated to the further breeding. Semen collections were realized at the owners of animals and in the veterinary clinic. Subsequently the experiments were realized at the Department of Animal Physiology of the SUA in Nitra. The spermatozoa motility was evaluated using CASA analyzer (SpermVisionTM, Minitub, Germany) at the temperature 5 and 37°C for 5 hours. In the study, 13 motility parameters were evaluated. Generally, crude glycerol has generally negative effect on spermatozoa motility. Morphological analysis was realized using Hancock staining and the preparations were evaluated at magnification 1000x using classification tables of morphologically changed spermatozoa. Data clearly detected the highest number of morphologically changed spermatozoa in the experimental groups (know twisted tails, tail torso and tail coiling). For acrosome alterations swelled acrosomes, removed acrosomes and acrosomes with undulated membrane were detected. In this study also the effect of crude glycerol on spermatozoa membrane integrity were analyzed. The highest crude glycerol concentration significantly affects spermatozoa integrity. Results of this study show that crude glycerol has effect of spermatozoa motility, viability, and membrane integrity. Detected changes are related to crude glycerol concentration, temperature, as well as time of incubation.

Keywords : dog, semen, spermatozoa, acrosome, glycerol, CASA, viability
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