

BULL SEMEN EVALUATION POST-THAW AND RELATION OF SEMEN CHARACTERISTICS TO BULL'S FERTILITY

Aloyzas Januškauskas and Henrikas Žilinskas

Lithuanian Veterinary Academy, Department of Obstetrics and Gynaecology,

Tilžės 18, LT-3022 Kaunas, Lithuania. e-mail: janusalo@lva.lt

Abstract. Evaluation of the quality of cryopreserved bull spermatozoa is reviewed. The methods for the assessment of sperm quality have markedly improved over the last decades – starting with the assessment of morphological shapes and subjective motility analysis towards the more sophisticated analysis of the molecular changes in chromatin, membranes and catabolic activities of the sperm cell itself. Function of sperm plasma membrane under the hypo-osmotic conditions, distribution and concentration of ions, or function of different organelles seem to correlate with the degree of the viability of spermatozoa after freezing and thawing procedures. Many *in vitro* techniques that stimulate sperm function through female-derived factors, such as zona and oocyte, in zona pellucida binding assay, *in vitro* fertilization (IVF) and production of embryos, were employed to predict the outcome of artificial insemination in the field. Still, majority of methods used for semen analysis today are both - tedious and expensive, and, in many cases confined to human bias. In order to increase the predictive power of assessment, simultaneous analysis of multiple sperm attributes, or outcomes of several laboratory assessments must be combined to look for the overall effect of several independent sperm parameters.

Keywords: Sperm quality, sperm viability, prediction of sperm fertilizing potential, bull semen.