

## COMPARATIVE EVALUATION OF BOVINE SEMEN CRYOPRESERVATION METHODS AND EXTENDERS

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**Abstract.** The purpose this study was to carry out a comparative evaluation of semen cryopreservation methods and extenders. The study indicated that in thawed pellets sperm motility was by 40.7 and 88.9 % ( $P<0.001$ ) lower and absolute survival by 11.9 and 77.8 % lower in comparison with the semen frozen in 0.25 ml straws by, respectively, Baisogala and Lithuanian technologies. Duration of sperm survival was 5.8 % higher in pellets than in straws frozen by the Baisogala technology, but it was 32.7 % lower if compared with the Lithuanian cryopreservation technology ( $P<0.01$ ). Spermatozoa survival rate was 12.1 and 26.3 % higher in semen frozen by Baisogala and Lithuanian technologies in comparison with semen freezing in pellets ( $P<0.05$  and  $P<0.01$ ).

A comparative evaluation of the extenders used for semen freezing indicated that post-thaw sperm motility in the semen frozen with LGCK (lactose-glycerol-citrate egg yolk) control extender by the Lithuanian technology was 4.5 % higher than that in the semen frozen using Biociphos Plus extender but 6.8 % lower in comparison with Bioxcell extender usage. However, semen freezing with Biociphos plus and Bioxcell extenders resulted in insignificant differences regarding sperm motility and survival rate. The study indicated that absolute survival was 19.2 % higher and spermatozoa survival time was 1.2 hour longer when LGCK (lactose-glycerol-citrate-egg yolk) extender was used compared with Bioxcell usage ( $P<0.01$  and  $P<0.001$ ). It is recommended to use LGCK or Bioxcell extenders when bovine semen is preserved by the Lithuanian technology.

**Keywords:** bovine semen, extenders, cryopreservation