

SUMMARY

The aim of this study, the effect of antioxidants added to Laiciphose commercial extender was to investigate in vitro and in vivo parameters of bull sperm following freeze thawing process.

In this project, total of three Holstein bulls with at least two years old which were provided from the Lalahan Livestock Central Research Institute. Two ejaculates from bulls was collected twice a week was by using an artificial vagina. In obtained from ejaculates, some spermatological parameters (semen volume, semen color, semen pH, semen mass activity, sperm motility, sperm concentration, sperm plasma membrane integrity and, abnormal sperm) was determined, and then ejaculates of each bull were mixed, and was split into five equal aliquots and diluted using both of the L extenders which S (5, 10mM), GSH (0.5, 2 mM) and control (without additives) to final concentration of approximately 60×10^6 spermatozoa per ml. The extended semen were packed in 0.25 ml plastic straws after the equilibration periods, and then was frozen by controlled freezing tool, and stored in liquid nitrogen (-196°C). At least stored for 24 hours, straws were thawed in water bath (37°C) and examined by some spermatological parameters. For determining of in vivo fertility of frozen semen, frozen straws which were belonged into each bull were used in artificial insemination of totally 600 dairy cows. For pregnancy control, it was performed after 35. – 60. days following insemination by rectal palpation.

In this study; there were no significant differences were observed in spermatological parameters amongst groups including antioxidant and no antioxidant (control). The pregnancy rate

obtained from group with GSH 2 mM was lower than those of groups with GSH 0.5 and Control. But there is a difference of 2 mM GSH among 0.5 mM GSH and Control group.