

Effect of Sugar Combination in Tris-buffer on the Viability of Post-thaw Spermatozoa in Canine

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The purpose of this study was to investigate the effect of kind and combination of sugars on the viability and acrosome damage of post-thaw spermatozoa in canine. The extender used was Tris-citric acid extender (Tris-buffer) supplemented with 20% Egg-yolk, 8% glycerol, 1% Equex STM paste, and 70 mM sugars such as monosaccharide (fructose and xylose) and disaccharide (trehalose). To evaluate of sugar combination, the sugars supplemented in Tris-buffer were combined such as single (fructose, xylose, trehalose), two combinations (Fruc+Tre, Fruc+Xyl, Tre+Xyl) and three combinations (Fruc+Tre+Xyl). The concentration of sperm collected were adjusted of 50×10^6 per straw for freezing. The frozen spermatozoa were thawed at 37°C for 1 min and then analysis for CASA program in Livestock Improvement Main Center, NACF.

The motility of post-thaw spermatozoa in Fruc+Tre was higher than those in fructose, trehalose, xylose, Fru+Xyl, Tre+Xyl and Fru+Tre+Xyl (79% vs. 63, 66, 70, 71, 74 and 75%). The progressive motility after CASA analysis in Fruc+Tre group was also higher than those in fructose, trehalose, xylose, Fru+Xyl, Tre+Xyl and Fru+Tre+Xyl (67% vs. 53, 57, 60, 61, 62 and 64%). The acrosome damage of post-thaw spermatozoa stained was not significantly different among treatment groups such as fructose, trehalose, xylose, Fru+Tre, Fru+Xyl, Tre+Xyl and Fru+tre+Xyl (17.7, 18.3, 28.0, 17.0, 19.7, 20.0 and 19.0%).

The results indicated that the motility and progressive motility of post-thaw spermatozoa in Fru+Tre group was better, and acrosome normality was not different among all groups. The use of Tris-buffer supplemented with Fru+Tre as sugar for freezing of canine spermatozoa could be better and apply to semen banking and artificial insemination.

Key words) *canine, spermatozoa, frozen, sugar, CASA*