Improving the post-thawing quality of caprine frozen semen cryopreserved with skimmed milk extenders [1]

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Abstract

The objective of this experiment is to improve the low conception rate of the caprine frozen semen cryopreserved with skimmed-milk. The effects of egg yolk-tris-fructose (YTF) extender addition on the sperm quality of frozen-thawed skimmed-milk (SKM) semen were determined with computer-assisted sperm motility analysis system (CASA) and Semen Analyzer (VideoTesT-sperm 2.1). Frozen-thawed semen was extended in YTF extender at the proportion of 1 : 0, 1 : 0.5 and 1 : 1, respectively. The frozen-thawed semen characteristics including motility, progressive motility, CASA motility and acrosomal integrity were evaluated after extending and cultured for 0, 2, 4 and 6 h at 37˚C. The sperm motility and progressive motility percentage of frozen-thawed SKM semen extended in YTF extender at the proportion of 1 : 0.5 after thawing for 4, 6 h were significantly higher than those of the extended in YTF extender at the proportion of 1 : 0 ($P < 0.05$). No significant difference among the sperm acrosome integrity of frozen-thawed semen extendedin all different extender compositions. Artificial insemination with frozen-thawed SKM semen extended in YTF extender at the proportion of 1 : 0 and 1 : 0.5 resulted in significantly different kidding rates (33.3% *vs.* 66.7%; $P < 0.05$), the number of the kids (4 *vs.* 15) and the average litter size (1.0 *vs.* 1.5; $P < 0.05$). These results indicated that the SKM: YTF proportion of 1 : 0.5 in frozen-thawed SKM semen served as an optimal improvement for post-thawing semen quality and reproductive performance.

Key words: Goat, Frozen semen, Skimmed milk.

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