عنوان مقاله:

The cryoprotective effects of erythritol on frozen-thawed ram sperm

محل انتشار:

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خلاصه مقاله:

This study was conducted to evaluate the effect of replacing glycerol with erythritol on cryopreservation of ram spermatozoa. Semen samples (n=24) were collected from four rams in six times. In each session, the collected ejaculates (n=4) were pooled and split into 12 equal parts. The amount of 0.032 M glycerol (G32E0, equal to 3% glycerol), 0.016 M glycerol and 0.016 M erythritol (G16E16), 0.008 M glycerol and 0.024 M erythritol (G8E24), 0.032 M erythritol (G0E32), 0.054 M glycerol (G54E0, equal to 5% glycerol), 0.027 M glycerol and 0.027 M erythritol (G27E27), 0.013 M glycerol and 0.041 M erythritol (G13E41), 0.054 M erythritol (G0E54), 0.076 M glycerol (G76E0, equal to 7% glycerol), 0.038 M glycerol and 0.038 M erythritol (G38E38), 0.019 M glycerol and 0.057 M erythritol (G19E57) and 0.076 M erythritol (G0E76) were added. The diluted samples were frozen using standard protocol. After thawing, the samples were incubated at 37°C for 6 h. Results showed that progressive sperm motility and acrosome integrity were higher in G13E41 (18.85 % and 27.41 %, respectively) than treatments that contained only glycerol at 6 h ($p < 0.05$). At the level of 0.032 and 0.054 M cryoprotectant, the highest of total sperm motility was observed in G8E24 (19.16 %) and G13E41 (18.85 %) at 6 h, respectively ($p < 0.05$). Therefore, the quality of frozen-thawed ram spermatozoa can be improved by using the mixture of 0.013 M glycerol plus 0.041 M erythritol or 0.008 M glycerol plus 0.024 M erythritol.

کلمات کلیدی:

Cryopreservation, Polyol, Glycerol, Ram sperm