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Comparison of diluents containing pigeon plasma egg yolk, chicken plasma egg yolk and their combinations to preservation of ram semen at 4° C

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Abstract

The current study was conducted to evaluate the effect of pigeon plasma egg yolk (PPEY) and chicken plasma egg yolk (CPEY) compared to combination of PPEY+CPEY in tris-citric acid-fructose diluent to preserve the ram semen quality during liquid-cold storage. Semen samples were collected using the artificial vagina from four Qezel rams twice a week. Then, in case if the samples met the criteria, they were pooled and used for the experiment. Tris-citric acid-fructose based extenders were prepared using PPEY (28%, v/v), CPEY (28%), and the combinations of PPEY (7, 14 and 21%) + CPEY (21, 14 and 7 %), and used for the experiment. Following dilution of samples with extenders, total and forward progressive motility of spermatozoa (evaluated by computer assisted sperm analysis), viability and plasma membrane integrity was assessed at 0, 24, 48 and 72 of after cooling. Furthermore, amounts of malondialdehyde (MDA), as an oxidative indicator, were measured at mentioned time points. Results revealed that forward progressive motility (at 24, 48 and 72 h) and viability (at 72 h) were higher in PPEY (28%) group compared to all combination groups. Moreover, membrane integrity (at 24, 48 and 72 h) was greater in PPEY (28%) relative to combination groups containing 14 and 21% CPEY. Amounts of MDA did not differ among treated groups. In conclusion, combinations of PPEY+CPEY was not effective as PPEY (28%) and CPEY (28%) alone to preservation of ram semen during liquid-cold storage.

Key words: Plasma pigeon egg yolk, Ram, Spermatozoa, Malondialdehyde

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