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Cryopreservation of canine semen using plasma egg yolk of three avian species

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Abstract

Present study investigated a suitable source of plasma egg yolk (PEY) to supplement tris-based extender for cryopreservation of canine semen. Collected semen by artificial vagina was diluted to reach 50-100×10^6 per ML by Tris-based extender, supplemented with 20% PEY of three avian species (domestic chicken, domestic duck and pigeon) and 3% glycerol. After cooling specimen to 4°C for 1 hr, the specimens were diluted with equal volume of freezing extender consisting of 20% PEY, similar to initial PEY, and 7% glycerol to achieve the final glycerol concentration of 5%. The sperm viability parameters including total motility, progressive forward motility, plasma membrane integrity and live percentage of sperm were assessed following semen collection, after adding the first and the second part of semen extender and post thawing. Chicken PEY had better plasma membrane integrity (80.9±2.0 %) compared to pigeon PEY (76.6±3.08 %; P<0.01). There was not any other significant difference in semen viability parameters between chicken PEY (total motility: 85.4±2.72; progressive forward motility: 71.9±3.24; live percentage: 89.7±1.66) and other plasma egg yolks. In conclusion, due to the ease of availability and superiority in some sperm viability parameters, chicken PEY at the concentration of 20% could provide beneficial effect for cryopreservation of canine semen.

Key words: Plasma egg yolk, Semen, Canine, Cryopreservation

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