Effects of freezing on sperm velocity in four different age groups of jeremia buck

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Abstract

The present study was undertaken to investigate the effects of freezing on sperm velocity in four different age groups (young: < 1 year; mature: e<1.0–2.5 years; old: e>2.5–4.5 years and very old: e>4.5 years) of Jeremia buck. Tris Citric Acid Egg Yolk Extender (TCAE) was added to semen samples and cryopreserved using a programmable freezer prior to plunging into liquid nitrogen (196° C). The fresh extended and frozen-thawed semen were subjected to computer automated semen analyzer (CASA) for sperm velocity evaluation. Fresh extended sperm in mature age group showed significantly highest values for average path velocity (VAP) 76.73 ± 1.24µm/s, straight line velocity (VSL) 55.30±1.05µm/s, curvilinear velocity (VCL) 144.31±2.38µm/s, amplitude of lateral head displacement (ALH) 6.58±0.10µm and beat cross frequency (BCF) 39.59±0.36Hz as compared to young, old and very old age groups of buck (P<0.05). Significantly (P<0.05) higher values for VAP, VSI, VCI and ALH were observed in fresh as compared to frozen-thawed sperm in all age groups of buck. Thus, age of bucks should be considered as one of the factors that contribute to better sperm velocity which might affect fertilizability of the sperm. Optimizing the freezing technique is also essential in order to obtain satisfactory results after artificial insemination.

Keywords

Age, Buck, Computer automated semen analyzer (CASA), Goat, Semen freezing.