Effects of Refrigeration (at 4-8^{0}C) on Semen Quality of Goat Varieties (Sannan and Jamunapari) During Storage Conditions at the Artificial Insemination Centre, Thirunelvely (Northern Province)

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Cryopreserved semen management for artificial insemination is a crucial step towards obtaining acceptable pregnancy rates in cattle breeding. Abeygunawardena et al, (2001) stated that the proportion of calvings from Al was negligible in Eastern Province (EP) and Northern Province (NP) when compared to other regions of Sri Lanka. So far there are no studies regarding the doe factors, semen factors, inseminators and the successful rate of the Al service of goat semen in Jaffna. Thus the objective of the present study is to examine the viability of goat semen and the effects of refrigeration (at 4-8^{0}C) for 3 days on the viability of goat chilled semen. In our present studies chilled semen of goat species (Sannan and Jamunapari) were collected by means of artificial vagina and stored at 4-8^{0}C. General examination including volume, colour and pH was performed on chilled semen. After dilution, microscopic examination was performed to evaluate the progressive individual motility, sperm morphology and sperm count. Chilled semen of both species was compared by microscopic examination from day 0 to day 3 during storage. Hemocytometer was loaded with 10 HI of semen to evaluate the sperm count. Eosin stain (1%) was used to assess the viable sperm. Hemocytometer and stop watch were used to evaluate the sperm velocity. Repeated measures and analysis of variance (ANOVA) with Dunnett's post test were performed to compare the semen quality of both species. Viability decreased significantly (ANOVA P< 0.05) in a time dependent manner during storage. For Sannan, at O h (control) (93.02 ± 0.6958%; 22.460 ± 1.1020 um/s), 2411 (86.18 ± 0.6250%; 16.870 ± 0.8278 um/s), 4811 (80.96 ± 0.7471%; 11.190 ± 0.8825 um/s) and at
72 h (76.64 ± 0.5294%; 4.993 ± 0.3624 um/s). For Jamunapari at O h (control) (91.13 ±
0.2605%; 19.060 ± 0.7957 um/s), 24 h (87.74 ± 0.2137%; 14.210 ± 1.1850 um/s), 48 h (81.91 ± 0.2188%; 8.923 ± 0.8795 gm/s) and at 72 h (77.57 ± 0.2440%; 4.347 ± 0.7467 um/s). The viability of both species did not differ significantly among them where as individual progressive motility of semen of Sannan was higher than Jamunapari species. The reason for lowest successful insemination of goat semen may be due to the failure of applying proper estrus detection aids and technical problems, etc.

Key words: Semen quality, Goat semen, Viability, Sperm count