Seasonal Variation in Semen Characteristics and Conception Rate of Frozen Semen in Farm-Reared Elk Deers Treated with C1DR Devices

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In deer farming of Korea, there is currently considerable interest in the application of artificial insemination (AI) for reducing inbreeding and producing superior offspring from foreign breeding stocks. Assisted techniques in relation to semen collection and oestrous synchronisation have been prerequisite for AI to be successful in Elk. Recent works suggest that C1DR devices are very effective in synchronising oestrus, especially at the beginning of breeding season (Asher et al., 1992) and fixed–time AI following oestrous synchronisation is very practical and cost-effective (Jabbour et al., 1993). The objective of this study was to investigate effect of season on semen characteristics and the effect of the number of sperm per AI and fixed-time AI following treatment with a C1DR device on the conception rate of Elk deer.

Semen collected from March to May showed significantly lower sperm motility than that collected in other months and all semen characteristics (volume, motility, density, and total sperm per ejaculate) were significantly higher in October. Although there was no apparent overall difference in conception rates (CR) with different numbers of sperm per straw, AI with $40 \times 10^6$ sperm/straw showed higher CR than with $20 \times 10^6$ sperm/straw at 60h after C1DR device withdrawal. CR from AI at 60h after C1DR-device withdrawal was higher than other fixed-time AI, but there was not significant between AI times. Reasonable CR in Elk deer can be obtained from frozen-thawed sperm and at a fixed-time after C1DR removal.


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