The Thawing Temperature of Cryopreserved Equine Semen and Its Effects on Spermatozoal Motility

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Advances in artificial insemination techniques and semen handling have led to an increased rate of successful pregnancies and increased efficiency in large scale breeding programs. These techniques are done for various reasons such as, reduction of STDs and STIs, access to superior genetics, the preservation of superior genetics, and can also be used as a therapeutic aid for certain types of infertility. As these AI technologies continue to advance, it is important that the inseminated sperm is of high quality. The following study aims to determine the optimal temperature for thawing extended cryopreserved ejaculated semen. Ejaculated stallion semen collected by means of an AI and cryopreserved in 0.5ml straws and thawed at temperatures 15°C, 37°C, 45°C, and 70°C. Thawing the semen at 37°C resulted in the highest motility, as it is the temperature at which the semen is stored in the cauda epididymis. A one-way ANOVA statistical analysis was conducted to assess whether there was a significant difference in post-thaw motility at the above temperatures. At an α value <0.01, a p-value of <0.00001 was extrapolated, thus the result is significant, meaning thawing temperature does affect the motility of cryopreserved stallion semen. By optimizing the motility of past cryopreserved semen, the rate of conception with such semen is increased, thus increasing the cost effectiveness of all breeding programs.