Viability of Bovine Semen, Phase II

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The purpose of this research focused on whether or not thawing water temperatures made an impact on viability of bovine semen cells. Bovine semen was tested to find the prime temperature of thawing water that each semen unit can be exposed to and still be considered viable after being exposed to a constant room temperature. The hypothesis was that bovine semen will have the highest percentage of viability after being exposed to a thawing water temperature of 26.67°C; this is the essential temperature of thermoregulation of the testes in bulls for normal sperm production. The viability of bovine semen is important to the artificial insemination process. Thawing units of water were set to 4.4°C, 26.67°C, 49°C, 71°C, and 35°C (control) water. The straws (containing bovine sperm cells) were thawed for 45 seconds and then a drop of each straw's contents was observed under microscope. Cells were counted as viable or unviable based on morphology, motility, or live/dead every 5 minutes for 15 minutes. Averages were taken for each 5 minutes of each test of each temperature. Results showed a small range of viability, excluding the 71°C test. The highest viability was 4.4°C with 63.53%. Twenty-six degrees Celsius had 59.1%, 49°C had 56.5%, 71°C had 0%, and 95°C had 62.17% average viability. The ideal percentage of viability is 70%. A range of thawing water temperatures can keep bovine semen viable. The control is the ideal temperature to ensure the fertilization of an egg, but other temperatures maintained a steady viability too.

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