

Montana Cook

*Artificial Insemination: Comparing Methods of Thawing Bull Semen*

I chose this project because of our family cattle business, Bridle Bit Simmentals, does artificial insemination and I wanted to see if the thawing method we use contains a higher percentage of live sperm versus other thawing methods. Rural America's Most Important Network(RFD) T.V. gave me the idea a few years ago when they aired a special on frozen semen.

I tested five different methods for thawing semen 6 times each. The 1st method was thawing the straw of semen for 30 seconds in a water thermos at 36<sup>0</sup>C. The 2nd method was 60 seconds air thaw at a room temperature of 21<sup>0</sup>C. Method 3 was exposed to air for 30 sec, refrozen in a tank; then thaw for 30 seconds in a thermos similar to the first method. Method 4 was six minutes in a water thermos at 36<sup>0</sup>C. The 5th method was at 25<sup>0</sup>C for 30 seconds in a water thermos.

My hypothesis was supported because I predicted that method 1 would be the most efficient to use. Method 3 was the least efficient method tested and contained the least amount of live sperm. Method 3 was the worst because the sperm cells were alive then when they reentered the liquid nitrogen. Re-entering the liquid nitrogen made most of the live sperm suffer from cold shock which killed a majority of them. My experiment can help Artificial Insemination (AI) techs by giving them the most efficient method to use.