The purpose of this experiment was to try to determine the most effective way to freeze stallion spermatozoa to optimize post-thaw quality. This was performed by comparing: (1) centrifugation and freezing extenders and (2) sperm density in freezing straws. By evaluating spermatozoa samples from four different Morgan horse stallions it was determined which extenders and concentration produced the highest-post thaw spermatozoa quality. The first objective evaluated the effect of two extenders for centrifuging (INRA 96 and Kenneyôs Modified Tyrodes) and two freezing extenders (INRA Freeze and CSU). Four stallions from the UVM Morgan Horse Farm where collected, raw semen was initially evaluated for progressive motility and membrane integrity using HOS (hyper-osmotic swelling) and frozen following specific protocols on six separate occasions. The frozen samples were thawed at a later date and evaluated using the same procedures at t=0 minutes and t=30 minutes. The results from part one were used to investigate the effect of sperm density (100, 250 or 500 x 10^6 sperm/ml) at the time of freezing. There were statistically significant findings that showed CSU freezing media (FM) improved HOS. There was no difference in centrifugation media (CM). KMT was chosen as the CM for part two. Statistical analysis of part two has shown no difference between the three densities. Each stallion produced different results, which leads us to believe that each stallion needs a specific method for freezing semen. More research needs to be done to see why some stallionôs semen freezes poorly and for others, well.