



ABS Global Research Update

ABS packaged semen offers the same high fertility when packaged in either ½ ml or ¼ ml straws

Optimize Fertility

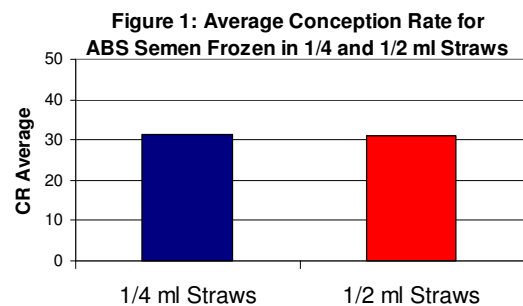
Both ABS-produced products (¼ and ½ ml straws) can be used with confidence in a successful AI program. Recognize the following to optimize reproductive performance:

- For individual sires, ABS places the same number of sperm in ¼ and ½ ml straws.
- The ¼ ml straw's smaller diameter results in more uniform ice crystal formation and removal during freezing and thawing processes and so leads to less freeze-related damage to sperm.
- The ½ ml straw's larger mass/size may provide an advantage of being more robust to temperature fluctuations especially after thawing and before semen is deposited in the female.
- Large numbers of inseminations are needed to make accurate reproductive performance comparisons (as seen in Figure 1 with over 6600 total inseminations). Anything less than 1000's of inseminations per treatment (straw type, sire, inseminator, etc.) used under similar conditions can yield misleading or incorrect conclusions.

Reproductive Performance

Numerous studies have been conducted over the years to compare sperm quality and conception rates (CR) in ¼ ml and ½ ml straws. A recent study by M.T Kaproth and co-workers (Theriogenology 63:2535-2549) reported a small CR difference in dairy heifer inseminations between ¼ and ½ ml straws, 68.74% (n=2521) and 67.21% (n=8694), respectively, when a milk extender was used. However, many researchers have found no difference in CR between the two straw types when other semen extenders are used.

To validate the performance of ABS produced product, a study was conducted to evaluate CR for semen frozen in ¼ ml and ½ ml straws using ABS's unique semen processing and freezing methods. Semen was collected from eight bulls and processed using a split collection technique assuring that the exact same semen and total spermatozoa numbers went into each package. For insemination, units were thawed in 35 to 37°C water for 30 seconds and inseminated in lactating dairy cows on large commercial U.S. dairies. **Results from this ABS trial showed no significant difference in CR between semen frozen in ¼ ml and ½ ml straws**, 31.27% (n=3229) and 31.06% (n=3373), respectively (Figure 1).



Product Confidence

Since the introduction of the ¼ ml straw in 1968, frozen bull semen has been available in two sizes of plastic straws: ¼ and ½ ml. Research has developed freezing procedures to enhance semen quality and reproductive performance in both types of straws so they can be used successfully in an A.I. program.

Proper semen handling such as protecting units during and after the thaw process from temperature change in the field are important to optimize fertility when using either ¼ ml or ½ ml straws.

ABS customers can choose the straw size that best meets their needs as most ABS sires are available in ¼ ml and ½ ml straws. The unique ABS proprietary semen production handling, processing and computerized wind tunnel freezing continue to produce **consistent, high quality semen and outstanding fertility performance regardless of straw size.**