techline

ABS Global Technical Services Newsletter

Multiple Straw Thawing

How many units of semen are you thawing at once? This is a very popular question in the industry these days. Dairy press and professionals have quoted research showing a progressive decline of conception rates from the first to the fourth straw. Other research has shown no effect on pregnancies by thawing multiple straws.

Some of the earliest work of this nature was done by Lee and coworkers (JDS 1997) and is often what recommendations are based upon. Lee's study showed a significant decrease (50%) in conception rates from the first to fourth unit of semen. The recommendation was to never thaw more than two units of semen at one time. A closer review of the data in this study shows only 89 breedings were evaluated. This data set is not representative of larger farms which are commonly using professionally trained technicians.

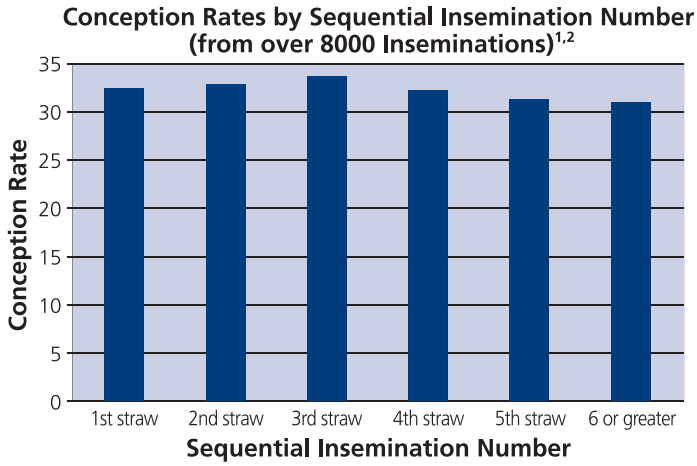
Furthermore, statistical analysis of the data reveals a 48% chance that these differences are from chance alone (P value = .48). A confounding factor in this study may have been thermal shock post thaw. In fact, heat shock in this study, which took place in Hawaii, poses a much greater risk than managing cold shock that occurs in most areas of the U.S.

Brown and coworkers (JAS, 1991) conducted a study in which the data clearly show that up to ten straws of semen may be safely thawed at one time. It is imperative, however, the bath is properly stirred to ensure straws do not have direct contact. For normal thaw units, use no more than five units per bath to prevent contact damage and temperature fluctuations of the bath.

Two major considerations for optimal conception rates are elapsed time post thawing and technician proficiency (which were not evaluated in Lee's study).

Interestingly, ABS Global field trial data combined with data from Sprenger and co-workers (2001) show similar conception rates for 1 to 6 or greater sequential inseminations (Figure A) when professional technicians were responsible for the insemination and handling of the semen straws. While ABS is not promoting multiple thaws for the inexperienced technician, it's trained staff is confident that the question is not the number of the straw out of the bath, but rather the expertise and efficacy of the inseminator. Be aware, fatigue may become a factor in conception rates for many herdspersons on large breeding days (especially if using some of the synchronized breeding programs). All of these issues point to the importance of having properly trained inseminators and monitoring programs in place.

Figure A



In conclusion, the number of straws to thaw effectively depends on many variables including technician proficiency, proper thawing technique, and environmental conditions to name a few. Because of this variability each farm must consider this question on an individual basis as there is a lot of farm to farm and technician to technician variability. If not employing the services of a professionally trained AI technician, the recommendation to thaw only two straws at a time is probably a good one.

References

1. N. Michael et al., NAAB Proceedings, 2002.
2. M. J. Sprenger et al., ADSA Proceedings, 2001.

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