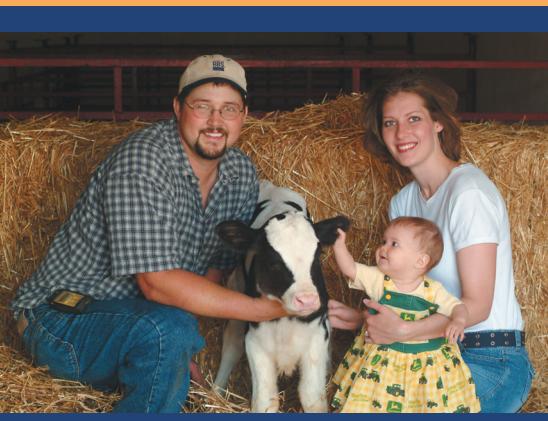


Quality milk and reproductive performance are essential to your dairy operation.

Understanding how they are related can lead to implementation of management tasks designed to maximize both factors and improve dairy profitability.

Recent studies confirm that preventing mastitis in early lactation animals improves reproductive efficiency. Beyond the udder health benefits, there are dramatic improvements in days to first service, days to conception, and services per conception in cows that are infection free at first service compared to those herd rates infected near first service.



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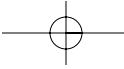
Information About Mastitis & Reproductive Performance



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How does poor milk quality or mastitis affect reproduction?

The following studies have shown there are many biological possibilities.

- Moore (1991) revealed a negative correlation between clinical mastitis caused by Gram-negative mastitis pathogens (generally environmental) and reduction due to altered inter-estrous intervals and decreased luteal phase length. Irregular cycles would cause increased variability in hormones essential for establishing a pregnancy.
- Cullor (1990) suggested endotoxins might induce luteolysis and negatively influence conception and early embryonic survival by release of inflammatory mediators.



- Moore and O'Connor (1993) hypothesized Gram-negative mastitis pathogens may stimulate production of prostaglandin F_{2α} which subsequently would cause luteal regression potentially causing loss of an established pregnancy.
- Oliver (2000 NMC regional meeting) summarized mastitis-reduced reproductive performance through variation in hormonal patterns, follicular development, embryonic development, and/or uterine environment.

How does mastitis impact a dairy's reproductive performance?

Three studies (Frigo 2004, Sherrick 2001 and Kelton 2001) examined the correlation between clinical mastitis cases and a decrease in reproductive performance in early lactation cows (Figure 1).

The results show 8-15% higher conception rates for uninfected animals as compared to those experiencing clinical cases of mastitis. Uninfected animals became pregnant faster with approximately 19-25 less days open.

Fig. 1

The Effect of Mastitis on Reproductive Performance in Early Lactation Cows			
Study	Parameter	Mastitis	Uninfected
Kelton, et al. 2001*	Conception Rate [†]	38%	46%
Sherrick, et al. 2001**	Days to First Service Days Open Services per Conception Conception Rate [†]	77.3 ± 2.7 110 ± 6.9 2.1 ± 0.2 48%	67.8 ± 2.2 85.4 ± 5.8 1.6 ± 0.2 63%
Frigo, et al. 2004***	Days Open Services per Conception Conception Rate [†]	107 ± 5 2.1 ± 0.1 48%	88 ± 2 1.6 ± 0.1 63%

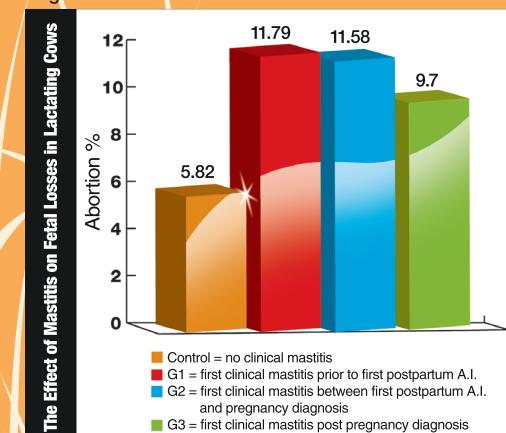
* Based on clinical mastitis event within 30 days post insemination
** Based on clinical mastitis before first service
*** Based on clinical mastitis cases
[†]Conception Rate = Pregnancies/Services (Inverse of Sales/Conception from trial data)

Does mastitis impact pregnancy loss?

Animals experiencing mastitis can have decreased conception rates, but once the animal becomes pregnant the risk continues. Santos et al. (2004) studied the effect of timing of first clinical mastitis on milk production and reproduction. Figure 2 focuses on the results for abortion incidences (%).

Uninfected animals had significantly less abortions than those animals with reported clinical mastitis. There was also a difference in median days open (MDOPN - point at which 50% of the group is pregnant). Uninfected animals conceived approximately 20 days earlier (MDOPN = 114) than animals with mastitis (MDOPN = 134).

Fig. 2



"The economic benefits of good udder health extend beyond quality milk and milk production."

What does this decreased reproductive performance mean to my bottom line?

Consider the value of a pregnancy to be \$350 and a day open \$2.50. Based on the above research results, mastitis can cause an estimated potential loss of \$50 per animal (approximately 20 more days open x \$2.50) and/or estimated dollar value loss of \$38 (11% abortion incidence or pregnancies lost x \$350).



How can I stop mastitis from affecting my herd and my profits?

- Effective milking hygiene, dry treatments with use of approved udder health products and regular machine maintenance can help prevent mastitis and improve not only udder health and milk quality, but also reproductive efficiency.
- Focus on close-up heifers, dry cows, close-up cows, fresh cows and early lactation cows.
- Maintain clean, dry, comfortable maternity pens and loafing areas. Many early-lactation infections occur in the periparturient period, three weeks pre- and post-calving.
- Good nutrition is crucial. Well-balanced rations help prevent mastitis by keeping the immune system healthy and helping to prevent metabolic disease.

How can I learn more?

Effective mastitis prevention starts with research-proven ABS Reproductive Management Systems® and Quality Milk Systems®. No other teat dip technology is more field-tested – or more field-proven for powerful, effective results. Pre- and/or post-dipping, your cows (and your profits) are well protected.



In today's precision dairy industry, it's the science and service you need for success. Call your professional ABS Representative today or visit us online at www.absglobal.com to learn more.