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Impact of Intramammary Infections on Mammary Development in Late Gestation Heifers

The following is taken from the Udder Topics newsletter from the NMC. This study was done by M.X.S. Oliveira, C.S. Gammariello, P.H. Baker, K.M. Enger, S.K. Jacobi, and B.D. Enger.

A study was done on 21 pregnant heifers at Ohio State University. Intramammary infections (IMI) are common in non-lactating dairy cattle and are known to disrupt mammary tissue architecture in non-pregnant heifers, but their impact on mammary development during pregnancy is not well understood. The authors hypothesized that intramammary infections would impair mammary development by restricting epithelial tissue expansion and delaying stromal tissue regression.

Heifers were enrolled at 3 gestational ages - 180, 208, and 238 days carried calf. One culture negative quarter of each heifer received a saline infusion, and the opposite quarter was challenged with 5,000 CFU of Staphylococcus aureus. Mammary secretions were collected at multiple time points until tissue harvest 21 days post-challenge, when heifers were 6.5, 7.5, or 8.5 months pregnant. Tissue samples from central and edge parenchymal regions were analyzed for immune cell infiltration and morphometric changes.

The conclusion of the study showed that intramammary infections cause structural damage to the mammary gland in pregnant heifers, with more pronounced effects during late gestation.

Tissue from mammary glands with intramammary infections may have failed to reach full maturity compared with their uninfected counterparts, suggesting a potential limitation in milk accumulation and secretory capacity.

No Better Place to Grow Up Than on a Dairy Farm

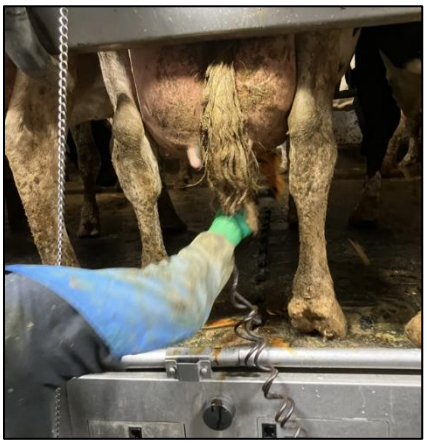
I grew up on a small dairy farm in Western Wisconsin. While I was on the farm, I complained a lot about how much work there was to do. I always joke that on my dad's farm if an animal didn't make him money, he would get rid of them and that included his kids. Looking back now I realize how lucky I was to grow up where I did. I recently found an old picture of my older brother, dad and me after cleaning out a calf pen in the spring of the year with pitch forks. I don't know if many of the kids these days on farms know what pitch forks are, but people of my age certainly remember them. I am still proud of this picture because it shows I actually did do some work when I was younger.

\- ***Dr. Mark Sosalla***

Cow Cleanliness is Very Important

In recent milk quality visits, we have seen where dairymen are falling behind on flaming the udder hair off of the cows. This is very important as the hair collects manure and bedding material and makes it harder for the milking technicians to get the teats clean.

Tail trimming is also important because the manure on the tails gets on the udders and in parallel parlors the milkers must contend with the dirty tails when prepping the cows.



Cost of Mastitis Cases is Highly Variable

Most of the following was taken from an article by Derek Nolan in the Progressive Dairyman.

Most sources say the average cost of a case of mastitis is around $250. Studies are highly variable on the cost depending on when the case of mastitis occurs and how severe it is.

Understanding both the direct and indirect or hidden costs will help in making better mastitis management decisions.

Direct costs are from treatment and veterinary costs. Total treatment costs include the expense of the antimicrobial and discarded milk. Non-salable or discarded milk is the most significant direct cost of mastitis. Although still not widely adopted, milk cultures can help guide treatment choices, leading to more cost-effective treatments.

Indirect costs are expenses that are not immediately visible on the farm.

Because these costs are often unseen, they are more challenging to estimate in mastitis cases. Reproductive performance, early culling, and milk production losses are indirect costs. Most researchers put the cost of an extra day open around $2 per day. Studies estimate that up to $90 of the total cost of mastitis can be attributed to decreased reproductive performance. It is estimated that 25% of culling decisions are from mastitis. **Loss of future milk production is the most significant cost associated with a case of mastitis.** Duration impacts how much milk and revenue are lost, while timing affects future milk production. Like other indirect costs, milk yield loss depends on when the infection occurs.

Recent research shows that milk production losses are similar across all lactation stages when comparing infected cows to healthy ones. A clinical cure is distinct from a biological cure. Just because the milk still looks abnormal does not mean bacteria are still present. Culturing can help guide more precise treatment decisions.

Meeting is Educational Opportunity

The 2026 National Mastitis Council meeting will be held in Birmingham Alabama from January 26-29, 2026. The meeting is for milk quality, mastitis and udder health researchers, veterinarians, dairy producers and dairy industry partners.

It is designed to boost your milk quality and udder health knowledge. This is an excellent meeting with people in attendance from all over the world interested in milk quality. If you are interested in going to the meeting go to the website: https://www.nmconline.org/2026-annual-meeting/ to check out the agenda and prices.