Mastitis affects reproduction in dairy cows

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Getting cows pregnant is a significant factor in the profitability of dairy farms. Health, particularly mastitis, is an important player that affects the fertility of a dairy cow. Researchers have documented negative effects from mastitis, including increased days to first AI, increased days open, increased incidence of pregnancy loss, and decreased pregnancies per AI at first insemination.

So how does mastitis affect reproduction of a cow? Does the timing or severity matter? Researchers at the University of Wisconsin-Madison investigated this question and their findings are summarized below.

The study used a defined breeding risk period (BRP) of 3 days before AI to 32 days after AI. Cows were grouped into the following categories: (1) healthy, (2) mastitis before the BRP, (3) subclinical mastitis during BRP, (4) chronic subclinical mastitis, (5) clinical mastitis during BRP, or (6) chronic clinical mastitis. Subclinical mastitis was defined as an elevated somatic cell count and no abnormal milk and clinical mastitis was defined as abnormal milk. Cases were classified as mild, moderate, and severe.

The occurrence of mastitis during the breeding risk period had the most detrimental effect on pregnancy results when compared to healthy cows. A case of subclinical or clinical mastitis during the BRP reduced the odds of pregnancy by approximately 25 to 33%. The odds of pregnancy for cows with chronic clinical mastitis was reduced by almost 50%. Mild cases of clinical mastitis during the BRP reduced the odds of pregnancy by 30% while moderate and severe cases reduced the odds of pregnancy by 50%. Cows that cultured gram-positive or negative bacteria had reduced odds of pregnancy by 40-50% compared to cows culturing no bacteria.

So why do cows with mastitis have poorer fertility? Mastitis can invoke an intense inflammatory response with many immune system factors. It is likely the inflammatory immune response goes beyond the level of her udder and affects other organs, including the uterus, oocytes, and possibly the embryo.

Milk quality and reproduction go hand-in-hand.