The Effects of Treating Subclinical Mastitis  
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Many dairy producers do not give enough attention to subclinical mastitis in their herds. Attention is usually focused just on dealing with the clinical cases that occur. While subclinical mastitis is the predominant form in most herds and is the most costly to a producer, most producers don't know the prevalence rate in their herd, do not know which cows are infected, and do not attempt to treat the infected cows. The infected carrier cows in a herd serve as a reservoir of bacteria, and are an important source of infection for other cows in the herd. Two recently published research reports addressed the effects of subclinical mastitis in a herd, and the economic benefits of treating subclinical infections. One report appeared in the NMC 2006 Annual Meeting Proceedings, and the other was published in the Journal of Dairy Research, volume 72.

To determine the direct and indirect effects of subclinical mastitis, researchers in Vermont and New York developed a computer model to estimate the overall effects of diagnosis and treatment of subclinical mastitis during lactation. Factors considered in the model included the % of cows that were uninfected and susceptible, the % that were transient subclinically infected, the % that were chronically subclinically infected, and the % that were recovered uninfected and susceptible. Other parameters that were varied in the simulations included the duration of infections, cure rate for chronic infections, and the transmission rate between cows. The results of the computer simulations showed that identifying and treating cows with subclinical mastitis can lead to a significant reduction in the duration of infection among the individual cows, and to a decrease in the impact of mastitis infection in the entire herd.

The other research report from The Netherlands looked at the economic benefits of treating chronic subclinical infections during lactation. In that study a partial budgeting model was used, and only subclinical infections caused by Strep. uberis and Strep. dysgalactiae were studied. The analysis of the data generated showed that the profitability of subclinical mastitis treatment depends mainly on five factors: the probability of treatment-induced cures among infected cows, the pathogen transmission rate between cows, the culling rate in the herd, the retention pay-off from treating, and the costs of antibiotic treatment. When comparing a 3-day versus an 8-day treatment regime in herds in which the transmission of mastitis pathogens between cows was prevented through udder hygiene practices, the partial budget analysis showed that the 3-day treatment regime would be profitable over a wide range of input values. However, an 8-day treatment regime would be profitable only for very valuable cows, in herds where the risk of pathogen transmission was high, and/or when the culling rate of cows with subclinical infections would be high. The authors noted, however, that because bacteria populations, cow characteristics, and management level can differ widely between farms, the economic benefit of treating subclinical streptococcal mastitis infections during lactation is probably highly farm dependent.

The results from these two studies should be considered by all dairy producers as they give attention to managing subclinical mastitis in their herds. Discuss establishing such a program with your veterinarian, extension person, milk handler rep, or other competent consultant.