

# USE OF LABEL VS. EXTENDED ANTIBIOTIC THERAPY FOR THE TREATMENT OF BOVINE MASTITIS

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## ABSTRACT

Mastitis is a bacterial infection of the cow's mammary gland caused by pathogenic bacteria such as staphylococci and streptococci. One method of controlling this disease is by infusing infected mammary quarters with antibiotics to eliminate infection. The purpose of my study was to determine the most effective antibiotic therapy regimen for treating mastitis in lactating dairy cows at the UGA Teaching Dairy. Mammary quarters of 30 cows that were diagnosed with mastitis were treated with one of the following antibiotic therapies by intramammary infusion: Spectramast LC, Hetacin-K, Pirsue, Amoxymast, and Today. Quarters were treated using 2 regimens: either per label instructions ("label") or extended therapy, which included a total of 6 days of antibiotic treatment ("extended"). Prior to treatment, quarter milk samples were collected to determine somatic cell counts (SCC) and establish the bacteriological status. After treatment, milk samples from treated quarters were monitored for bacteriology and SCC daily for 1 week and then weekly thereafter for 1 month. Differences among cure rates (% cure) and mean SCC prior to treatment for each regimen were separated using SAS 9.3 Proc GLM for Windows. Overall cure rate across treatments was 41.2%. Highest cure rate was observed with Today (80.0%) followed by Spectramast LC (44.4%), Pirsue (40.0%), Hetacin K (33.3%), and Amoximast (16.6%). No differences were observed among treatments between label (42.1%) and extended therapies (40.0%) ( $P>0.05$ ). However, compared with label therapy, extended therapy resulted in numerically higher cure rates for streptococci (40.0 vs. 33.3%) and coagulase-negative staphylococci (CNS) (100 vs. 75.0%), but lower cure rates for *Staphylococcus aureus* (14.3 vs. 33.3%). Across treatments and therapies, cure rates were highest for CNS (85.7%), followed by the streptococci (36.4%), and *S. aureus* (25.0%). The average SCC prior to treatment in any infected quarter destined to cure after therapy was 587,000/ml, whereas the average SCC of quarters destined to fail was 2,994,000/ml ( $P<0.05$ ). Results suggested that Today was the most effective product when used as an extended therapy, while Pirsue was the most effective product for label therapy across all organisms. Quarters with higher SCC at the time of treatment had a significantly lower cure rate overall than quarters with lower SCC; thus, the SCC may be used as a bench mark when deciding if an infected quarter should be treated.