

# Mastitic cow management practices on California dairies

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## Introduction

Minimizing the risk of antibiotic resistant organisms and antibiotic residues in dairy and dairy-beef products is a topic of nationwide interest. Our long term goal is to achieve this objective, based on decreasing unnecessary antibiotic use on dairies. To design an effective outreach program on judicious use of antibiotics, it is imperative to describe the actual practices on dairies. Antibiotic therapy on dairies is mostly used on post-partum and mastitic cows. On most of large California dairies, dairy employees are ultimately responsible for sick cow identification, disease diagnose, and treatment administration. Thus, to understand how antibiotics are used on dairies, researchers need to work directly with the individuals ultimately administering antibiotics to cows. The objective of this study is to describe identification techniques and treatments decisions for mastitic cows.

## Materials and Methods

A total of 19 dairies, 2 Jersey and 17 Holstein herds, ranging in size from 600 to 9500 cows, were visited in Tulare-Kings and Merced-Stanislaus Counties in California. Two bilingual veterinarians recorded cow-side observations and responses from individuals treating mastitic cows during hospital-pen milking. Information on the following topics was collected: a) mastitis diagnosis techniques, b) hygienic measures during milking, c) milk sample collection, d) facilities for mastitic cows, and e) mastitis treatments.

## Results

Cows identified with mastitis were kept in the same production pen (n=1) or moved to the hospital pen (n=18). Six dairies were fitted with a milking parlor just for fresh and mastitic cows. Dairies with a single parlor milked the mastitic cow pen last. In the hospital, pen mastitic cows were housed alone (n=7); with sick and lame cows (n=3); or with sick, lame, and fresh cows (n=8). On 11 dairies mastitic cows did

not fit in a single milking round, and of those, 4 dairies did not clean milking units between mastitic cows. On only 6 dairies the milker changed or disinfected their gloves between cows during hospital-pen milking. All dairies cleaned the end of the teat with disinfectant wipes (n=16), cotton balls soaked in alcohol (n=1), or dipping the teat in alcohol (n=2) prior to use of an intramammary treatment. Mild and moderate mastitic cows were identified during regular milking based on quarter inflammation (n=2) and quarter inflammation and milk appearance (n=17). Three dairies used California Mastitis Test (CMT) for confirmation of mastitis. Cows with abnormal milk were sampled as soon as they were identified (n=3) or after they were moved to the hospital pen (n=12) to look for contagious mastitis pathogens. In addition, 6 of these dairies used milk culture results for selective treatment of mastitis. On those dairies, nonbacterial growth and mild or moderate cases of mastitis caused by gram- pathogens were not treated. The first treatment options for mastitis were intramammary ceftiofur (2 d (n=1), 3 d (n=6), 4 d (n=3) or 5 d (n=1)), cephalosporin (1 d (n=1), 3 d (n=2), 4 d (n=1) or 5 d (n=1)), hetacilin (3 d (n=1)), pirlimycin (3 d (n=1)) or intravenous oxytetracycline and sulfamides (5 d (n=1)). If after treatment completion cows showed abnormal milk (n=16) or positive CMT (n=3), the antibiotic therapy was continued with the same (n=13) or a different (n=6) drug.

## Significance

Most dairies used milk appearance for detection of clinical mastitis. On more than half of the dairies, mastitic cows were housed with non-mastitic lame, sick or fresh cows, thereby increasing their risk to acquired mastitis. Although milk culture was commonly used to identify contagious pathogens in milk, culture results were only used for selective treatment decisions in half of those dairies. All but 1 dairy used intramammary treatment for mild or moderate cases of mastitis using 4 different antibiotics, although the length of treatment varied widely for the same antibiotics across dairies.