

## APPLICABILITY OF *ON-FARM TESTING* METHODOLOGIES FOR THE DETECTION OF SUBCLINICAL MASTITIS IN DAIRY COWS AND THEIR CONTRIBUTION FOR ANIMAL WELFARE

### APLICABILIDADE DE TESTES AO PÉ DA VACA PARA DETECÇÃO DE MASTITE SUBCLÍNICA EM VACAS LEITEIRAS E SUA CONTRIBUIÇÃO PARA O BEM-ESTAR ANIMAL

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Mastitis is an infection of mammary glands caused by microorganisms, which affects the dairy cattle worldwide. Subclinical mastitis are asymptomatic, but with decrease in production. Diagnosis is made through somatic cell count (SCC) in milk, and the greater the amount of these cells, the greater the productivity loss from the animal. In this research we tested the applicability of *on-farm testing* methodologies for the rapid diagnosis of Subclinical Mastitis, by the use of the California Mastitis Test (CMT) and a modified Wisconsin Mastitis Test (Somaticell®) at the time to perform manual milking. Forty five 45 lactating cows, belonging to three family dairy farms located at the following Regions of Rio de Janeiro State, Brazil: Coastal Lowlands; Metropolitan; and Northwest, were analyzed. From 177 mammary quarters tested, 73 (41.2%) presented positive result at CMT (Figure 1), and 82 (46.3%) positive result at Somaticell® (Figure 2). There was a variation of 5.1% between one test and the other; 17 teats (7 animals) presented positive result at Somaticell® and negative at CMT, while 8 teats (2 animals) presented positive result at CMT and negative at Somaticell®. Three cows had already lost one mammary quarter. Both tests have a visual reading, although CMT is a qualitative test with subjective reading of positivity: negative (-), positive (+, ++, +++ e ++++), and Somaticell® has a quantitative scale reading as manufacturer's labeling ( $69 \times 10^3$  a  $197 \times 10^4$  somatic cells/mL). The results show that *on-farm tests* can be used for rapid detection of subclinical mastitis, and it is an important finding for public health because pathogenic strains of *Escherichia coli* and *Staphylococcus aureus* have been isolated from raw milk, collected from mammary quarters with high SCC. The use of *on-farm testing* methodologies will allow the producer to take quick decision avoiding sending contaminated milk for human consumption. The diagnosis of subclinical mastitis and the proper treatment of sick cows will result in decreased inflammation and pain of the udder of the animal in the act of milking, and during sucking milk by the calves, helping to promote animal welfare and also the reduction of yield loss milk and premature culling of unproductive animals.



Figure 1. California Mastitis Test



Figure 2. Somaticell®

Keywords: California Mastitis Test, Wisconsin Mastitis Test, Somaticell®.

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