

Determination of a threshold somatic cell count for identification of subclinical mastitis in dairy cows based on the CMT Score

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Mastitis has been reported as the major production related disease of dairy cows in Sri Lanka. Subclinical mastitis (SCM) is characterized by high somatic cell counts (SCC) in milk without any visible abnormalities in milk and udder and without any systemic signs. To mitigate economic losses and ensure safer dairy production in Sri Lanka, it is crucial to detect SCM in the early stages. The diagnosis of SCM often relies on SCC values that exceed the threshold level. There is a lack of precise information regarding a SCC threshold specified for the detection of SCM in Sri Lanka. Therefore, the objective of the present study was to establish a threshold SCC to identify the cows affected with subclinical mastitis based on the California Mastitis Test (CMT) scores. A total of 1661 lactating cows from three commercial dairy herds located in the Nuwara Eliya district of the Central Province, Sri Lanka were used in the study. Farms were visited during noon milking, and 20 mL of composite foremilk samples were aseptically collected for the CMT test, and the SCC measurement. CMT was performed by adding 3mL of CMT reagent to 3 mL of milk and results were read based on the mixture change, which was scored by the nature of the viscous gel. SCC was estimated using a somatic cell counter. Various threshold levels of SCC were considered for the CMT score of 0 (negative or healthy). The percentages of samples below and above each threshold level were compared among various threshold levels. Of the total of 1661 cows examined, 1118 (67.3%) were negative for SCM based on the CMT score (CMT 0). The threshold value that classifies the data within a cluster with minimum misclassification (90%) was obtained when the SSC count was greater than or equal to 375 000 cells/mL. Accordingly, 375 000 cells/mL is proposed as the threshold SCC to identify the cows with SCM.

Keywords: Subclinical mastitis, Somatic cell count, CMT test, Dairy cows

Acknowledgement: Financial assistance given by the Peradeniya University Multidisciplinary Research Grants (Grant No. 199) is acknowledged.