PortaSCC®, New Portable Quantitative SCC Test for Mastitis

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Introduction

Somatic cell count (SCC) in milk has become the universal means of screening and monitoring mastitis. The SCC testing is usually performed in a laboratory setting. The only cow-side test available for estimating SCC is the California Mastitis Test (CMT). More recently, a portable instrument using a digital imaging principle was introduced. The objective of this study was to demonstrate the performance characteristics of a new portable quantitative SCC test (PortaSCC®) using an inexpensive handheld digital reflectometer.

Materials and Methods

The PortaSCC® milk test is a simple test strip that contains a sample window and several layers of reagent and absorbence pads. To perform a test, a drop of fresh milk sample (35-40 μL) is introduced into the sample window, followed by three drops of activator solution. An enzymatic color reaction takes place and the blue color generated is proportional to the white blood cell count in the milk sample. The color can be quantitatively read by a hand-held digital reader or estimated semi-quantitatively by visual comparison to a color chart.

We evaluated the performance of the PortaSCC® milk test using the digital reader vs. data from the reference laboratories.

Results

Fifty fresh milk composite samples were collected from a farm in New Jersey with help from the extension service of Rutgers University. The samples were split and assayed by reference method and by the PortaSCC® test strips. The digital reader was found to have a resolution of 10,000 cells/mL, and the analytical range of the PortaSCC® test is from 0 - 3,000,000 cells/mL. Cell counts above three million counts were reported as

Significance

We have demonstrated the use of a new portable quantitative SCC test for testing fresh milk samples that will have utility for checking subclinical mastitis. The PortaSCC® milk test is suitable to identify sick cows in a herd using composite samples. The test will also be useful for monitoring fresh cows or cows in sick pens using composite samples, or to estimate the SCC in bulk tanks. A special version of the PortaSCC® test with two minutes assay time will also be useful for assaying quarter milk samples. The simplicity, accuracy and high sensitivity of the PortaSCC® milk test make it suitable as a cow-side testing tool.