

# On farm on-line Somatic Cell Count measurements

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## Background

Early detection of mastitis is important to keep cows healthy and to have good quality milk. The somatic cell count (SCC) is an important mastitis indicator. The company Mastiline has developed LUCI®. With this instrument the SCC in the milk can be determined by ATP (rapidly measuring actively growing microorganisms through detection of adenosine triphosphate) value determination during the milking of a cow. ATP method is scientifically proven to have good correlation with the flow cytometry results which currently remains the gold standard in somatic cell counting. The instrument consists of a sampling module in which a milk sample is collected and is brought into contact with a reagent. The ATP value is then determined by comparing the measured sample with an internal standard. The instrument is initially developed for application in a milking robot, but may eventually also be applicable in conventional milking stalls. The relationship between the LUCI® analysis and the standard SCC analysis has been investigated.



**Figure 1.** LUCI® measures the Somatic Cell Count (SCC) during every milking > 50K cells/ml.

## Method (spring 2018)

In 7 weeks' time, spring 2018, during 4 periods of 3 consecutive days ~50 milk samples have been taken in a robotic milking system at a test farm in the north of The Netherlands. The, in total 520, samples were randomly taken of cows milked, by the standard installed ICAR certified milk meter. After milk sampling, the sample was split into two samples, one sample was directly analysed with LUCI® and the duplicate was stored and sent to a certified laboratory to compare with the flow cytometry results.

## Results

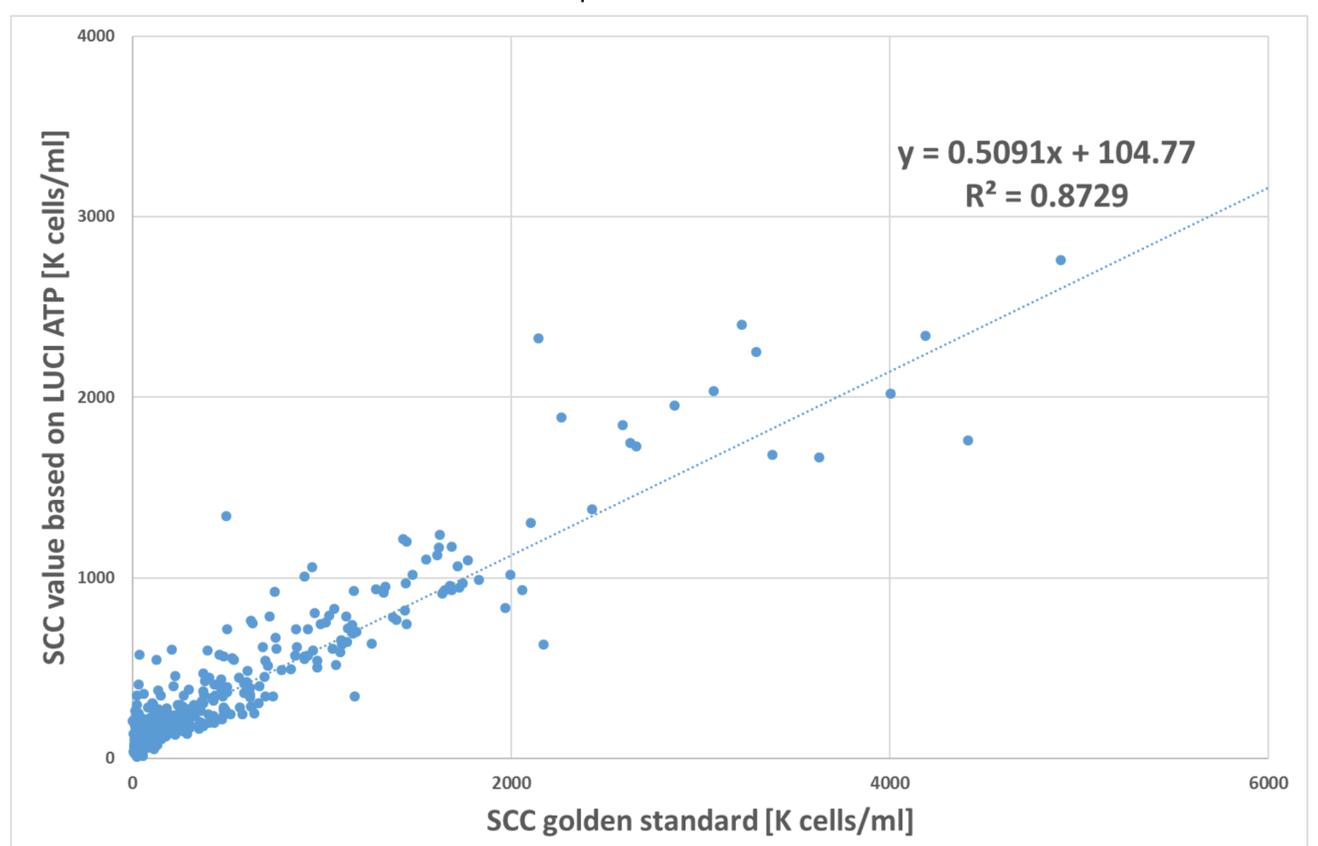
An high correlation (0.87) between LUCI® analyses and the flow cytometry (golden standard) SCC analyses was found.

## Conclusion

LUCI® SCC milk analyses from individual cows can be used as a highly effective tool for diagnosing sub-clinical mastitis.

## Acknowledgements

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**Figure 2.** An high correlation (0.87) between LUCI® analyses and the flow cytometry SCC analyses was found.



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