



# Improved milking time test as a tool in udder health programs

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## Introduction

The objective of this study is to reveal if an improved milking time test performed on regular basis without a special reason, can add value to the standard milking time test and establish better insight on milking and improve milk quality and udder health.

An improved method for the milking time test is developed and will be tested on 225 farms within a large Dutch Mastitis project. These farms had low (75), medium (75) or high (75) bulk milk cell count in 2005. Main features of the improved method is continuous data collection of vacuum during milking together with milk flow data.

First results of the improved method are shown.

It consists of:

- a small central unit to be mounted on the top of the claw
- four vacuum sensors
- portable flow meter
- hand held computer.

Measuring at frequency of 200 Hz at  
short milk tube,  
long milk tube,  
short pulsation tube  
mouthpiece of the liner.  
Near at hand hind quarter of the claw



Figure 1 Metal tube to connect sensor



Figure 2 Connecting device between sensor and short milk tube (Sonden Bitec)

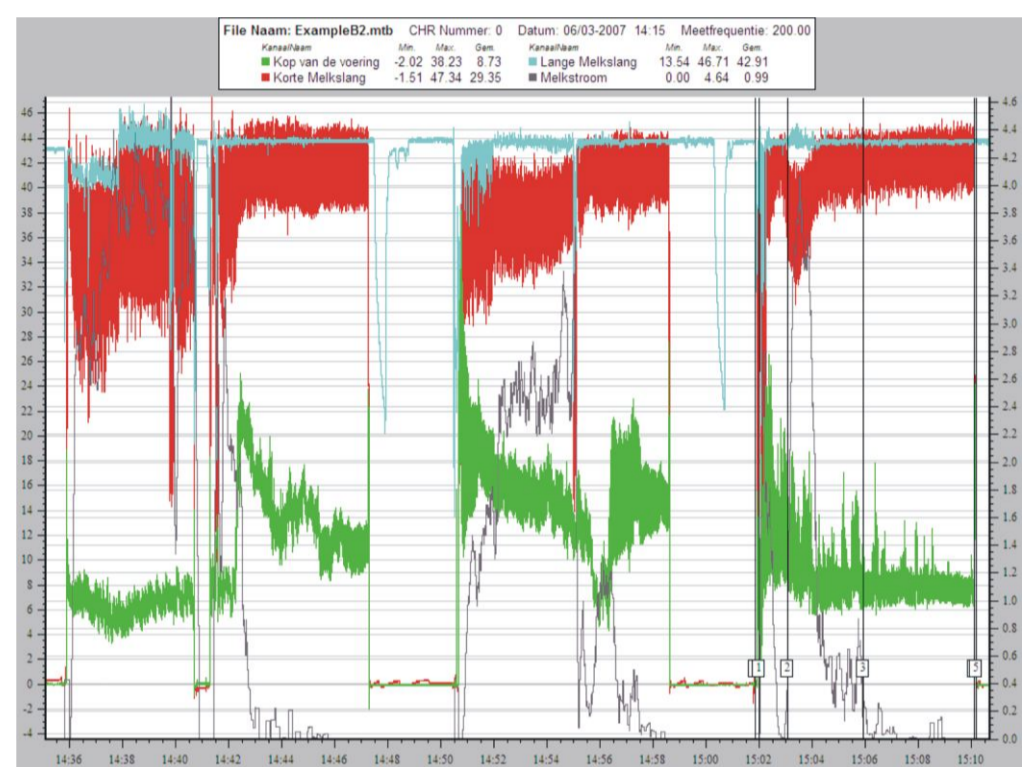
The sensor is connected to the tube through a short silicone hose. To measure the vacuum in the short milk tube a device that consists of two halves of a metal ring with a needle with a pointed end with a small hole is used (Figure). The hole of the needle points down to avoid flooding the sensor by milk.

Data from the hand held computer is converted into data the analyzing program uses. The analyzing software is an adapted version of MT2000 package (MT200 evaluating software by DSE AS, Denmark, 2006). The software is adapted to the new elaborated method and displays and analyses the milk flow.

Information is gathered about the milking machine, milking technique and teat condition. A year before till a year after the visit data of cow and bulk milk tank cell count are gathered.

## Results

An overview per cow milking of the vacuum and milk flow measurements within a graph and calculated figures per cow milking phase is given. It gives good insight regarding the milking machine and the milker. Problems like unstable vacuum, dry milking and bimodality are clearly seen.



Example of 3 cow milkings with vacuum instability, kick-off, bimodal flow and overmilking. The third milking is divided into 5 phases: attach, milk ejection, main milking phase, over milking and detach.

The interpreted gathered information is shared on paper with the farmer and if there are problems observed, advice is given to improve the situation.

## Discussion

The improved milking time test gives a lot of information on cow milking especially because of the imbedded milk flow and the complete view of a cow milking. This gives input for advice to the farmer which improvements should be made to the milking machine and/or milking technique. The farms will be followed till one year after the visit and compared to anonymous reference farms on improvement of udder health.

### Acknowledgements

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### References

DSE A/S. 2006. User manual – MT200 Evaluation. Project no: 5116, document no.: D5116-018, version 02.00.00  
BITEC Engineering, Sonden for short milk tube. Güttingen, Switzerland