ICAR certified
Milk Meter Calibration Software from DeLaval
– experience from practice

Olle Selander, DeLaval International AB, Sweden
MM27 and the Calibration window in Alpro System

Quote DE:

‘Perfect combination of labour saving calibration and milk meter accuracy.’
Milk Meter Calibration Software from DeLaval

Topics

Introduction
• What it does
• How it works
• How it’s done

Survey
• Benefits
• Calibration results
• What experienced people think about it
• SE, DE, NL, FR
Milk Meter Calibration Software

What it does

ICAR guidelines for certified milk meters require:

- Initial Calibration
- Installation test
- Routine check

The Calibration Software is approved for use in all of these activities!

Certified by ICAR in Dec 2013! [listed on ICAR web page]
Milk Meter Calibration Software
How it works – in principle

A. *Compares statistics* in the Herd Management system

- milk weights from identified cows to expected yield over a number of milking sessions - levels MM to each other
- system data of total milk to the bulk tank reciept – compares MM to external reference

B. *Calculates calibration* from collected data

- BIAS for every individual milk meter MM25/MM27
Milk Meter Calibration Software
How it’s done – use the calibration window in ALPRO

Current calibration factor: 1.00
Last calibration date: 08/22/14

1. Calibration factor 0.98 – 1.02 OK?

2. BIAS +/- 3% OK?

<table>
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<tr>
<th>MPC Parlour Pos</th>
<th>Count</th>
<th>StDev</th>
<th>Relative Yield</th>
<th>Current BIAS</th>
<th>New BIAS</th>
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Calibration factor is related to total milk in the bulk tank; Count is number of milkings in the statistical calculation; StDev is standard deviation of Relative Yield; Relative Yield is Average of Yield/Expected Yield (should be 98.00 to 102.00); BIAS is the calibration value for the milk meter.
Milk Meter Calibration Software
Send new BIAS to the milk meter
Milk Meter Calibration Software
Milking in buckets not required
– can still be used as a complement
Milk Meter Calibration Software from DeLaval

Important points for success

• Farmer need to keep track of the tank milk prior to calibration

• BIAS in the milk meters must be double checked to be the same as in the Calibration software!

• Good identification fulfills statistic demands faster
Milk Meter Calibration Software Survey, April 2015

• 8 Experts responded
• 2 Systematic benefits assessed
• 6 Example farms
• 80 – 1100 Milking cows

• 16 – 60 Milk meters per installation
• MidiLine (swing over)
• Parallel parlour
• Rotaries

Special case:
• AMR (Automatic Milking Rotary)
Milk Meter Calibration Software
Labor savings

- From man days to man hours - significant!

- NL, saving of 4-8 bucket milkings per milk meter and one visit to the farm

- FR, saving of 6 bucket milkings for every milk meter except six of the milk meters in the parlour

- SE, e.g. for a double 12 parlour the labor cost over a five year period including initial calibration, installation test and routine checks is calculated to be reduced with over 90%

- DE, for a 60 places rotary the labor saving for initial calibration and installation test was four man days.
Milk Meter Calibration Software
Farm profitability

- Parlour is not filled up with workers disturbing the milking routine

- All: Less stress for cows (Animal Welfare)

- NL: Overall the cost for the farmer of initial calibration and installation test could be reduced

- NL: Better milk out and more total milk during calibration

- DE: For rotaries reduced capacity and downtime was improved with the new method and less waste milk during calibration

- DE: Better overview for the farmer of the performance of the milk meters making it possible to faster detection of a deviating milk meter
Milk Meter Calibration Software
Work-facilitating and safety

• NL, FR: bad ergonomics of carrying buckets with milk weighing 15-25 kg to the scale and tank

• NL: it is not even allowed with manual lifting above 23 kg

• SE: The menu in the software was easy to use

• SE: Safer - as bucket milking is reduced or eliminated
Milk Meter Calibration Software
Environment, energy and resource need

FR and NL:
• Shorter milking session, gives shorter vacuum pump running time - energy saving
• Less buckets to clean - hot water and detergent saving
• Less people and fewer visits - less transportation
Milk Meter Calibration Software
Routine test

- Once a year – not so much experience yet!
- SE: 24 place parallel parlour
- All milk meters were within limits +/- 3%

![Graph showing Current BIAS/New BIAS values ranging from 0.95 to 1.05 across different test points.](chart.png)
Milk Meter Calibration Software from DeLaval

Conclusion

• Software instead of time consuming bucket milking

• Efficient and accuracy data continuously available for monitoring

• Initial calibration, installation test and routine check

• Many benefits shown by this study

• Potential to revolutionize the organization of milk recording
Milk Meter Calibration Software from DeLaval

• Thank You for listening!

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